

COUNTWAY LIBRARY
3 2044 115 035 487

RHODE ISLAND MEDICAL JOURNAL

THE FRANKLIN D. ROSS
LIBRARY

September 1991

Volume 74, Number



*The Emergency Room in Rhode Island:
Further Observations*

FRANCIS A COUNTWAY LIB OF MED
EXCHANGE OFFICE
10 SHATTUCK STREET
BOSTON MA 02115

RHODE ISLAND MEDICAL JOURNAL

THE FRANCIS A. CO
LIBRARY OF MED
BOSTON, MA
SEP 25 1991



Volume 74, Number 9

September 1991

EDITORIAL STAFF

Stanley M. Aronson, MD
Editor-in-Chief

Kimberly A. Poulton
Managing Editor

Hugo Taussig, MD
Book Review Editor

Seebert J. Goldowsky, MD
Editor-in-Chief Emeritus

EDITORIAL BOARD

*Edward R. Feller, MD
Chairman

*Joseph Amaral, MD

*Stanley M. Aronson, MD
Edward M. Belser, PhD, JD
Paul Calabresi, MD

*Richard A. Carleton, MD
Margaret Cololan, MSJ

*James P. Crowley, MD

*Peter A. Hollmann, MD

*Frank J. Schaberg, Jr., MD

*Fred J. Schliffman, MD
William J. Waters, Jr., PhD

*Member of Publications Committee

OFFICERS

Kathleen C. Hiltner, MD
President

Robert E. Baute, MD
President-Elect

A. Robert Buonanno, MD
Secretary

Frances P. Conklin, MD
Treasurer

Richard Wong, MD
Immediate Past President

DISTRICT AND COUNTY PRESIDENTS

Fred Vohr, MD
Bristol County Medical Society

William F. Coscina, MD
Kent County Medical Society

Orest Zaklinsky, MD
Newport County Medical Society

Frank J. Schaberg, Jr., MD
Pawtucket Medical Association

James P. Crowley, MD
Providence Medical Association

Joseph R. Dotolo, MD
Washington County Medical Society

Patrick R. Levesque, MD
Woonsocket District Medical Society

TABLE OF CONTENTS

EDITORIALS

401 Emergency Medicine: A Further Look

Our Scriptural Roots

The Language of Epidemiology (III). Scales of
Measurement

CONTRIBUTIONS

405 Prehospital Administration of Thrombolytic Therapy: Current Status in Rhode Island - Results of the Prehospital Administration of t-PA Study (PATS)

George R. McKendall, MD

Robert H. Woolard, MD

David O. Williams, MD

409 Emergency Medical Services and the Pediatric Patient

William J. Lewander, MD

Monica Kleinman, MD

415 The Effect of Race on Waiting Time in Two Urban Emergency Departments

Peter Kilmarx, MD

Yuan-Fei Chen, MD

Carolyn McGrath, MD

Julio Porro, MD

Andrew Ross, MD

Kay Wagner, MBA

Tom Wachtel, MD

424 Hispanic Utilization of a South Providence Emergency Room

David S. Narita, MD

428 Back from the Gulf: An Interview with Joseph L. Pfeifer, III, MD

Margaret Coloian, MSJ

431 STOMACHS: A Mnemonic for Mental Health Referral

Shawn Cooper, PhD, MPH

COLUMNS

434 HEALTH BY NUMBERS

Use of Hospital Emergency Departments for Routine
Medical Care

437 RHODE ISLAND'S CONTRIBUTIONS TO MEDICINE

Charles V. Chapin

442 THE RHODE ISLAND MEDICAL JOURNAL HERITAGE

445 BOOK REVIEW

Cover: A lithographic print by Daumier, dated 1833, and titled *La Colique*.

QUESTION:

**WHAT ARE THE THREE MOST
IMPORTANT THINGS TO
CONSIDER WHEN CHOOSING
AN INSURANCE AGENCY?**

ANSWER:

**EXPERIENCE, EXPERIENCE,
EXPERIENCE**

INSURANCE SINCE 1879

STARKWEATHER & SHEPLEY INC. - (401) 421-6900

Morton Smith, Inc. - (401) 861-6800

155 South Main Street

Providence, Rhode Island 02903

Emergency Medicine: A Further Look

The typical 1940 accident room was a modest facility inserted somewhere near the back entrance of the hospital. Indeed, in 1940, many hospitals did not bother to provide any unscheduled medical service. Fifty years later, however, the emergency room has emerged as an indispensable component of the general hospital and, for many in this nation, has become the major portal of entry into the health care system.

Injuries alone justify the need for emergency rooms and the physicians specifically trained to work in them. On an average day more than 170,000 Americans are injured seriously enough to require immediate medical care. Our grim records also remind us that injury is now the single greatest cause of death in Americans between the ages of one and 44 years. For those between the ages of 15 and 24, 63% of all deaths are directly ascribable to trauma. Injury is also the leading cause of enduring disability in the younger population.

Both the August and September issues of the *Journal* are devoted, in large part, to articles outlining therapeutic and educational advances in emergency medicine, particularly as they pertain to the lives of Rhode Islanders. In the current issue, the first article addresses the life-saving effects of shortening the time interval between the onset of acute myocardial infarction and the introduction of thrombolytic therapy. The second article notes the sobering frequency with which life-threatening illness in children is confronted in the emergency room, and then recommends specific training and newer facilities to meet the needs of this pediatric population.

The next two articles consider yet other dimensions of emergency room management and purpose. Two social questions are raised: In rendering medical care, do our Rhode Island emergency rooms practice some form of racism? And why, in the economically deprived neighborhoods of Rhode Island, is the

emergency room used as an inefficient substitute for the primary care physician's office? Both of these two studies were undertaken by students destined to become physicians. The studies were conducted under careful faculty supervision in the emergency rooms of Providence's larger hospitals. The questions they raise are important and the answers they offer are deliberate and based upon a mature appreciation of the generated data.

Emergency medicine, which was not even listed as a discrete discipline by the AMA in 1970, had 14,700 practitioners by 1990 (ie, about 2.6% of all licensed physicians) and will have an anticipated 23,900 physicians by the year 2010 (representing about 3.3% of the physician population). While it is still the smallest of the specialties, the *AMA Physician Supply and Utilization by Specialty Study* projects a greater growth rate for emergency medicine than any other specialty in the next two decades. Its role in preserving the

health of the community clearly exceeds its numbers in the medical profession.

Stanley M. Aronson, MD

Our Scriptural Roots

The August issue of the *Journal* carried a commentary on some of the diseases, complexes and syndromes bearing the names of canonized saints. In the interests of broadening our appreciation of the historic antecedents of our diagnostic eponyms, we are providing the readership with an additional roster of disorders which cite persons or circumstances in the Scriptures, principally the book of Genesis. According to Rodin and Key's delightful encyclopedia,¹ the number of these biblical eponyms remains quite small. The year in which the eponym was first proposed in the secular literature is listed in parentheses.

Adam's Apple: The prominence of the thyroid cartilage; perhaps reflecting the older superstition of a piece of forbidden fruit impacted in Adam's throat. Its usage predates Western medical literature.

Adam's Deficiency: Congenital lactase deficiency; so named because motherless Adam had not been breast-fed and hence had no biologic need for lactose-reducing enzymes. (1959)

Delilah Syndrome. Marked sexual promiscuity in the female. (1974)

Job's Syndrome: A rare, inherited form of diffuse granulomatous disease associated with disseminated staphylococcal skin carbuncles. The Book of Job (7:5) says, "My skin

hardens, then breaks out afresh." (1966)

Lot's Wife Syndrome: Chronic hypernatremia with diminished thirst. Noted in rare cases of leukemia. Genesis (19:26) says, "But Lot's wife behind him looked back and she became a pillar of salt." (1984)

Noah Urge: Behavioral abnormality characterized by the desire to predict the end of the world. (1982)

The books of the Torah, thus far, are infrequently exploited in recruiting disease metaphors in contrast, for example, to Greek mythology or the lives of the saints. Sooner or later, however, some enterprising academics, seeking a fuller personal bibliography, will likely explore the fertile but currently fallow metaphoric lodes within the Scriptures. To these eager ones, the *Journal* offers a few tentative suggestions:

Jacob's Affliction: Acetabular dislocation. (Genesis 32:25)

Tamar's Pregnancy: Breech birth of twins. (Genesis 38:29)

The Mosaic Hand Syndrome: Palmar vitiligo, perhaps even leprous. (Exodus 4:6)

The Nodes of Ashdod: Perhaps bubonic lymph nodes. (I Samuel 5:6-12)

The Mark of Esau: Diffuse hirsutism (Genesis 27:11).

The readership is invited to submit further Scriptural references to recognizable disease. Osler, it should be remembered, suggested to his colleagues that a periodic review of the Bible was a deeply rewarding experience.

Stanley M. Aronson, MD

¹ Rodin, AE and Key, JD. Medical Literature and Eponyms: An Encyclopedia of Medical Eponyms Derived from Literary Characters. Krieger Co., Florida, 1989.

The Language of Epidemiology (II). Scales of Measurement

We measure things to make them more tangible or to compare them with other things; literally, to give them dimension.

But we cannot measure without access to a reliable scale, some outside criterion, which serves to simplify the mass of haphazard information, reducing it to categories. The scale is often a group of defined categories which are sometimes in a progression (such as numeric units) or sometimes without any hierarchy (such as nationalities, religions, etc).

We think most commonly of numeric scales but there are other, equally useful types of scales. A telephone book, for example; if all the entries in the telephone book were randomly listed, the book would still have some limited use – although it might take us weeks of labor to locate from the chaos the single name we seek. Instead, we have identified a singular characteristic of each name (its alphabetic elements, beginning from left to right) and have then devised a clever arrangement of the haphazardly ordered pile of names so as to comply with a previously ordered succession of letters in the alphabet. All that is required of us is that we recall this succession.

We may, for example, segregate a population by some other consciously selected property, perhaps nationality. Thus, a studied group might be made up of X Canadians, Y Mexicans and Z Others. Or, this population may be segregated by gender (X male, Y female); or, by mortality status (X dead, Y alive). We refer to this as a nomi-

nal scale (L. *nomen*, name). Typically, nominal scales have two properties: Their elements are mutually exclusive (ie, if, at a particular moment, one is female, one cannot be male); and they embrace the universe of possibilities (ie, the named categories cover all possibilities of that population. For example, a person's nationality has to be either Canadian, Mexican, or Other.) When there are but two possibilities (dead or alive; positive or negative) the scale is dichotomous.

An ordinal scale or ranking tells us about the relationships, the relative standing, of a single value (or person) when compared with the entire studied population. Thus, we might say that a particular student ranks 14th in an algebra class of 63 students. Or, that a country is in the lowest 10% of nations in terms of per capita funds expended on health. Or, that a person came in third in a foot-race involving ten runners. An ordinal rank (eg, first, middle third, last, etc.) therefore informs us about relationships but not objective values.

To learn that Subject B has a higher hemoglobin concentration than Subject C discloses nothing about Subject B's hemoglobin. If, on the other hand, we combine the ordinal ranking with the recorded hemoglobin concentration (ie, if we use a numeric scale) we then achieve a far better picture of Subject B's hemoglobin status in addition to his relative standing, by this particular criterion, in a diversified population.

Numeric scales allow us to generate substantial amounts of structured information. We may, for example, group all factory workers in terms of two vari-

ables: (1) whether or not they work with benzene; and (2) their recorded hemoglobin. The numeric values will now permit us to propose averages (eg, arithmetic means) of the hemoglobin values of each group; and for each, then construct measures of central tendency (averages) or dispersion (variance, standard deviation, etc).

Numeric scales, in contrast to ordinal ones, are constructed of evenly dimensioned categories. We know by definition, for example, that the interval between the integers 10 and 11 must be the same as that between 110 and 111. In an ordinal ranking, however, we have no idea of the interval size between any two ranks. Numeric scales tell us substantially more than do nominal or ordinal scale summaries.

Numeric, ordinal and nominal scales, however, can sometimes be closely related, one merging into another. Thus a blood pressure may be expressed numerically (180/114), ordinally (in the 94th percentile) or nominally (hypertensive category).

When logarithmic, rather than arithmetic, values of a population more nearly conform to a normal distribution, biostatisticians will often convert the recorded values to their logarithmic equivalents. This transformation to a logarithmic scale is often used in pharmacological studies determining such levels as the minimal or lethal doses of a particular agent.

No known human culture is without some appreciation of numbers. Every known language, at the very least, possesses words denoting 'one', 'two' and 'many', (With the primitive Chiquitos of Bolivia, the word for 'alone' also signi-

fies 'one'). Beyond 'two', in some rudimentary languages, things become fuzzy. But while the appreciation of number, the quantitation of tangible things, seems fundamental, it remains nevertheless an illusive concept to grasp. When a number is employed as an adjective (eg, three daughters) it is comfortably intuitive and down to earth. It becomes a concrete symbol expressing quantitative properties. When, however, a number is used as an abstract noun it becomes difficult to define (eg, what is the essence of 67ness?). We typically accept number, then, as an *a priori* reality and go on to worry about other things.

"What's one and one and one and one and one and one and one and one and one and one?"

"I don't know," said Alice, "I lost count."

"She can't do addition," said the Red Queen.

Stanley M. Aronson, MD

If you have a concern about the competence, well-being, or ethical judgment of a physician, please write or call:

Rhode Island Medical Society
106 Francis Street
Providence, RI 02903
331-3207

RIMS' experienced peer review committees on Competency, Impairment, offer effective and confidential help.

Save Thousands in Tax Dollars Immediately.

Save additional hundreds in
monthly lease payments.



ACT NOW.

Call Toll-Free

1-800-924-9223 (RI)

1-800-544-5580 (other)

Viti. Recognized as one of the most
customer-oriented dealerships
in the United States.

Viti Inc.

The Home of New England's Most Cared for Car Owners.

975 Fish Road Tiverton RI., Exit Fish Road off Rte 24.



Prehospital Administration of Thrombolytic Therapy: Current Status in Rhode Island—Results of the Prehospital Administration of t-PA Study (PATs)

George R. McKendall, MD
Robert H. Woolard, MD
David O. Williams, MD

... it would appear that successful initiation of thrombolytic therapy in the field prior to patient transport would result in substantial reductions in the delay from first contact with the health care system until initiation of thrombolytic therapy.

The utility of thrombolytic therapy in preserving left ventricular function and reducing infarct mortality has been demonstrated by several well-designed, randomized controlled

George R. McKendall, MD, is Co-Director of the Coronary Care Unit with the Division of Cardiology, Department of Medicine, Rhode Island Hospital, Providence, Rhode Island.

Robert H. Woolard, MD, is Director of the Department of Emergency Medicine at Rhode Island Hospital and Clinical Associate Professor at Brown University, Providence, Rhode Island.

David O. Williams, MD, is Physician-in-Charge with the Division of Cardiology, Department of Medicine, Rhode Island Hospital and Professor of Medicine at Brown University, Providence, Rhode Island.

studies.¹⁻⁴ Furthermore, the salutary effects of thrombolytic therapy are inversely related to time of administration such that the greatest benefit is derived when treatment occurs early in the course of an acute myocardial infarction (AMI). For example, the Gruppo Italiano Per Lo Studio Della Streptochinasi Nell'Infarto (GISSI) Study reported a 50% reduction in mortality in patients treated within one hour of symptoms.² Patients treated up to three and between three and six hours showed reductions in mortality of 23% and 17% respectively. No significant reduction in mortality was demonstrated in patients beyond six hours.

This relationship between time to treatment and benefit has served as a rationale to develop programs for prehospital use of thrombolytic therapy in order to treat appropriate AMI

patients at their earliest contact with the health care system.

The potential benefits of prehospital thrombolytic administration become more apparent when one considers the time delay from symptom onset to therapy initiation that exists with current AMI treatment protocols. In a study of 198 con-

ABBREVIATIONS USED:

AMI: acute myocardial infarction

ECG: electrocardiogram

GISSI: Gruppo Italiano Per Lo Studio Della Streptochinasi

Nell'Infarto

MITI: Myocardial Infarction Triage and Intervention project

PATs: Prehospital Administration of t-PA Study

t-PA: tissue plasminogen activation

secutive AMI patients presenting to the Rhode Island Hospital Emergency Department, the average time from emergency room arrival to ECG diagnosis was 28 minutes.⁵ An additional 70 minutes elapsed from the time of ECG diagnosis until initiation of thrombolytic therapy. Thus, from the time of emergency department arrival over 1.5 hours of time had elapsed before eligible patients received treatment. The magnitude of these delays is further appreciated when one considers that in the AMI patients presenting to Rhode Island Hospital via rescue, an average of 95 minutes had elapsed from the time of symptom onset until rescue arrival on scene. An additional 28 minutes were required for scene and transport time. Thus, it would appear that successful initiation of thrombolytic therapy in the field prior to patient transport would result in substantial reductions in the delay from first contact with the health care system until initiation of thrombolytic therapy.

There are several ongoing European and United States studies which are investigating the use of prehospital thrombolytic therapy. The largest and earliest trial is the Myocardial Infarction Triage and Intervention (MITI) project in the Seattle, Washington area. This trial is a randomized study encompassing the city of Seattle and surrounding King County. This study serves a population of over 1.2 million people. The first phase of this study demonstrated the feasibility of trained paramedics to correctly diagnose AMI in the field and then identify patients as eligible for thrombolytic therapy.⁶

The Study

The Prehospital Administra-

tion of t-PA Study (PATS) is an ongoing study conducted at the Rhode Island Hospital which is investigating the feasibility and utility of prehospital use of thrombolysis in Rhode Island. This multiphase study began in January, 1989.

Of the available thrombolytic agents, t-PA was chosen because of its short half life.

The first phase of PATS was an in-hospital trial designed to test a new dosing regimen of tissue plasminogen activator (t-PA) which was tailored for eventual prehospital use. Of the available thrombolytic agents, t-PA was chosen because of its demonstrated safety and efficacy, as well as for its short half life. This short half life does not commit a patient to a prolonged lytic state in the event that treatment needs to be discontinued.

The traditional method of t-PA administration, however, presents special problems for the prehospital setting. Conventional dosing regimens of t-PA utilize a small (6-10 mg) initial bolus injection followed by a prolonged, continuous infusion so that a total of 100 mg of drug is delivered continuously over three hours.⁷ This regimen requires a dedicated intravenous line and infusion pump, both of which are inconvenient and cumbersome for the prehospital setting. The ideal prehospital regimen would employ a bolus injection in the field without the need for an immediate infusion. With this in mind a new regimen of t-PA was designed. The regimen consists of an initial 20 mg bolus followed by a 30-minute delay after which 80 mg is infused over two hours. This was designed with attention to the

logistics inherent in prehospital use: that is, the 20mg bolus would be given in the field, after which the 30-minute delay (used for transport to the hospital where confirmation of eligibility is made) and then the remaining drug infused.

The first phase of PATS tested the safety and efficacy of this regimen in patients who presented to the emergency department with AMI. Eligible patients who provided informed consent were given the new regimen and taken directly to the cardiac catheterization laboratory where the status of the infarct-related artery was determined by coronary angiography. Infarct artery patency at 90 minutes following drug initiation has been used as the gold standard in the evaluation of thrombolytic therapy. Traditional regimens achieve patency in about 75% of those treated.⁷ Using the PATS regimen in 60 patients with AMI, patency was demonstrated in 55 patients (91.7%). Furthermore this improved efficacy did not appear to occur at the expense of adverse outcome such as recurrent ischemia, death, or bleeding complications when compared to other regimens. One patient did have an intracranial bleed; however, in retrospect, head trauma prior to treatment could not be ruled out in this individual. Thus the first phase of the PATS study demonstrated the safety and efficacy for the new dosing regimen of t-PA which was designed specifically for prehospital use.

Concomitant with the implementation of phase I, individual cities and towns were polled in order to determine the degree of a paramedic expertise in each community as well as the interest in participating in a pre-hospital research project. Of those communities responding,

Bristol, RI was chosen as the pilot town because of its willingness and ability to participate as well as for the fact that it provides 24 hour paramedic coverage. A second paramedic group from St Luke's Hospital in New Bedford, MA was added at a later date. During paramedic recruitment, a comprehensive program was developed to address issues of paramedic training, pre-hospital informed consent, and transmission of a 12 lead ECG from the field to the hospital.

The paramedics underwent a 15 hour training session designed to establish each paramedic's ability to identify patients with a suspected AMI, assess patient eligibility for thrombolytic therapy and successfully obtain and transmit a 12 lead electrocardiogram to the hospital for physician review. Paramedics were also trained in obtaining informed consent for a research protocol. A two-part consent process was designed whereby verbal informed consent is obtained in the field by paramedics followed by full written consent after hospital arrival. After completion of the training session each paramedic successfully completed a written examination (minimum passing score 80%) and demonstrated field skills in a simulation drill.

With the completion of this training session, the paramedics proceeded to phase II of the PATS study. This feasibility or "dry run" phase tested the ability of the paramedic unit to identify suspected AMI patients in the field, transmit the 12 lead ECG via cellular phone to the hospital and then make a determination of eligibility for thrombolytic therapy in consultation with the Emergency Department physician. No prehospital treatment occurred during this phase;

rather, paramedics were observed in the field and the rates of false positive and false negative eligibility determinations were monitored. Also, during this phase, the time required by the paramedics to make an ECG diagnosis was determined.

Paramedic eligibility determination was correct in all 89 patients for whom a prehospital determination was made.

The results of PATS phase II have demonstrated the feasibility of prehospital AMI diagnosis by paramedics.⁸ Of the first 100 patients with chest pain evaluated in the field, AMI occurred in 32. Twenty of these patients were eligible for t-PA. Paramedic eligibility determination was correct in all 89 patients for whom a prehospital determination was made. In the remaining 11 patients no determination of eligibility was made due to technical problems with the ECG transmitting device which have since been corrected. Most importantly, no incorrect determination of eligibility was made by paramedics. Therefore, paramedic diagnosis and eligibility determination was associated with a 0% false negative and 0% false positive rate. For this phase, the time to ECG diagnosis from rescue arrival on scene averaged 10 minutes. Thus, if treatment had occurred in the field, significant time would have been saved compared to the average 90 minute delay which occurs after hospital transport.

The current phase of PATS (phase III) is the actual administration of t-PA in the field by paramedics. This phase is an extension of the dry run phase. After paramedic field evaluation

and ECG transmission to Rhode Island Hospital, the paramedic team and Rhode Island Hospital physician determine treatment eligibility. Those patients who are thrombolytic candidates will receive a 20mg t-PA bolus in the field and then be transported to Rhode Island Hospital.

Currently this phase is underway only in the town of Bristol, RI. Paramedics in New Bedford, MA who are participating in the feasibility phase eventually will begin to administer t-PA in the field as well. The addition of other communities is dependent on local interest and ability to participate as well as the availability of paramedic coverage.

Results

To date, five patients with AMI have been treated in the prehospital setting by the Bristol, Rhode Island paramedics. Each patient had confirmed myocardial infarction after hospital admission. In each case paramedics correctly diagnosed AMI and identified the patient as a suitable candidate for thrombolytic therapy. The average time from rescue arrival to initiation of treatment was 34 minutes. Thus, within approximately one half hour of initial contact with the health care system these patients received definitive treatment for AMI. This contrasts remarkably with the time to treatment required for those patients who present to the Emergency Department. Obviously the small sample size of the ongoing phase is inadequate to comment accurately on the ultimate benefit of prehospital administration of thrombolytic therapy. A larger sample size will be necessary to make any definitive statements.

Discussion

It is recognized that varying levels of prehospital expertise exist throughout different communities. As such, prehospital administration of thrombolytic therapy may not be feasible because of the lack of specialized paramedic coverage in certain areas. In the majority of Rhode Island communities, prehospital care is not provided by paramedics but by rescue workers at the basic life support or emergency technician level. In such circumstances, it is not feasible to initiate a program of prehospital treatment. However, prehospital diagnosis of AMI by 12 lead ECG may facilitate treatment after hospital arrival by alerting the Emergency Department to the incoming diagnosis so that preparations for treatment can be made while patient is en route.

... within approximately one half hour of initial contact with the health care system these patients received definitive treatment for acute myocardial infarction.

This premise serves as the foundation for phase IV of the PATS project. This phase, currently in the planning stage, will randomize utilization of the cellular 12 lead ECG device by non-paramedic rescue units. The end point will be the time to in-hospital treatment from rescue arrival at the scene. It is hypothesized that those patients who have diagnostic 12 lead ECGs obtained in the field will receive treatment sooner after hospital arrival compared to those patients who do not have prehospital 12 lead ECGs.

To date, the PATS study has demonstrated that prehospital

diagnosis of AMI and determination of thrombolytic eligibility is feasible in Rhode Island. Furthermore, trained paramedics have been extremely accurate in their ability to correctly identify eligible AMI patients and to initiate treatment in the field. The impact of this ability to patient outcome remains to be seen and awaits completion of the treatment phase.

In the conduct of this and other prehospital trials, a common observation of low patient availability has been made. In the PATS feasibility phase only 20% of screened suspected AMI patients were eligible for t-PA. Similarly in the Seattle MITI Trial,⁶ only 24% of 453 AMI patients were eligible. This raises an important question as to the practicality of devoting large amounts of resources for equipping rescue units and training paramedics to give thrombolytic agents if only a small number of patients are actually to be treated in the field. Moreover, paramedics may encounter erosion of skills in the event of infrequent encounters with eligible patients. It may be that prehospital diagnosis, alone, without increased risk of prehospital treatment may be sufficient to avoid costly in-hospital therapeutic delays. The widespread routine use of prehospital thrombolytic therapy, therefore, must await completion of properly designed clinical trials in order to clearly determine the relative benefits and risks.

References

¹ Wilcox RG, Olsson CG, Skene AM, Von der Lippe G, Jensen G, Hampton JR (for the ASSET study group): Trial of tissue plasminogen activator for mortality reduction in acute myocardial infarction. *Lancet* 1988; 2:525-530.

² Gruppo Italiano Per Lo Studio Della Streptochinasi Nell'Infarto (GISSI): Effectiveness of intravenous thrombolytic treatment in acute myocardial infarction. *Lancet* 1986; 1:397-401.

³ National Heart Foundation of Australia Coronary Thrombolysis Group: Coronary thrombolysis and myocardial salvage by tissue plasminogen activator given up to 4 hours after onset of myocardial infarction. *Lancet* 1988; 1:203-207.

⁴ Guerri AD, Gerstenblith G, Brinker JA, Chandra NC, Gottlieb SO, Bahr RD, Weiss JL, Shapiro EP, Flaherty JT, Bush DE, Chew PH, Gottlieb SH, Halperin HR, Ouyang P, Walford GD, Bell WR, Fatterpaker AK, Llewellyn M, Topol EJ, Healy B, Siu CO, Becker LC, and Weisfeldt LM: A randomized trial of intravenous tissue plasminogen activator for acute myocardial infarction with subsequent randomization to elective coronary angioplasty. *New England Journal of Medicine* 1987; 317:1613-1618.

⁵ McKendall GR, McDonald MJ, Woolard R, Williams DO: Characterization of the time course from infarction onset to thrombolytic therapy: identification of delays and remedies. *Annals of Emergency Medicine* April 1990; 19(4):1195 (Abstract).

⁶ Weaver D, Eisenberg M, Martin JS, Litwin PE, Shaeffer SM, Ho MT, Kudenchuk P, Hallstrom AP, Cerqueira MD, Copass MK, Kennedy JW, Cobb LA, Ritchie JL: Myocardial infarction triage and intervention project - phase II: patient characteristics and feasibility of prehospital initiation of thrombolytic therapy. *Journal of the American College of Cardiology* April 1990; 15 (5):925-931.

⁷ The TIMI Research Group: Immediate vs delayed catheterization and angioplasty following thrombolytic therapy for acute myocardial infarction. *JAMA* November 18, 1988; 260 (19):2849.

⁸ McKendall GR, Woolard RH, McDonald MJ, Williams DO: Feasibility of prehospital acute myocardial infarction diagnosis: results of the prehospital administration of t-PA (PATS) study. *Circulation* October 1990; Supplement III:667 (Abstract).

Address correspondence to:
George R. McKendall, MD
Division of Cardiology
Rhode Island Hospital
Providence, RI 02903
(401) 277-5891

Emergency Medical Services and the Pediatric Patient

William J. Lewander, MD
Monica Kleinman, MD

Only in recent years have we begun to recognize and respond to the emergency medical needs of the child.

Each year more than 20,000 children die from injuries and acute medical illnesses. For every child who dies, four others are permanently disabled. Motor vehicle and bicycle accidents, drownings, burns and poisonings together represent the major causes of morbidity and mortality in childhood. These life threatening events have several factors in common. They occur acutely and without warning, and initially patients are often attended by a health care provider least specialized in the management of these problems. Most importantly the majority of these occurrences are either preventable or reversible if treated appropriately and expeditiously.

William J. Lewander, MD, is Director of Pediatric Emergency Medicine at Rhode Island Hospital, Providence, Rhode Island.

Monica Kleinman, MD, is with the Department of Pediatric Emergency Medicine at Rhode Island Hospital, Providence, Rhode Island.

One component to the solution is an effective Emergency Medical Services System. In 1973, the Emergency Medical Services Systems Act was enacted by Congress providing for the organization of the Emergency Medical Services System, the training of personnel, and emergency medicine research. The initial priority was the treatment of adults with cardiac disease. In the early 1980s attention focused on the rapid stabilization and transport of trauma patients.¹ Significant improvement has been made in both of these areas with the use of advanced cardiac life support techniques² in the field and the establishment of trauma centers and trauma systems.³ Only in recent years have we begun to recognize and respond to the emergency medical needs of the child.^{4,5} The etiologies of life-threatening pediatric emergencies, such as cardiopulmonary arrest are different from those in adults, and the signs and symptoms of distress may be subtle. Respiratory failure and shock are the common pathways

to cardiopulmonary arrest and must be recognized and treated early to ensure an optimal outcome. Events leading up to the arrest are diverse and include infection, foreign bodies, anaphylaxis, trauma, drowning, poisoning, and adverse ingestion.

To begin to respond to the special needs of childhood emergencies, advanced pediatric life support courses have been developed (ie, PALS,⁶ APLS⁷), federal demonstration

ABBREVIATIONS USED:

AHA: American Heart Association
APLS: advanced pediatric life support
CPR: cardiopulmonary resuscitation
EMT: emergency medical technician
PALS: pediatric advanced life support
PBLS: pediatric basic life support
PEMSTP: Pediatric Emergency Medical Services Training Program

grants for Emergency Medical Services for children have been established and implemented,⁸ and a new subspecialty, Pediatric Emergency Medicine has emerged with over 35 fellowship training programs nationwide. There is still much to do. An effective Emergency Medical Service System requires training, organization and coordination on many levels. Dr Robert Luten, national chairman of the "Year of the Child in Emergency Medical Services" has outlined the phases of care given by the Emergency Medical Service System⁹ (see Table 1).

Prevention. Pediatricians and family physicians play a major role in this phase through parent education. Informed parents who take responsibility for the safety of their own children, and safety-conscious children, are the keys to effective prevention. The use of seat belts and car seats, fences surrounding pools, smoke detectors, bicycle helmets, and poison prevention are just a few areas to which public awareness efforts should be directed.

Access To Care. Once an event has occurred, use of the 911 access number should be universal and parents, day care center personnel, and schools need to be educated as to its appropriate use. Unfortunately, it is not uncommon for the lay public to spend precious time attempting to contact a primary care physician when a child suffers a major injury or, conversely to contact a paramedic unit for a trivial problem. An uneducated decision can jeopardize patient care by creating an unnecessary delay in obtaining emergency treatment or tying up a paramedic unit that could be available for a true emergency elsewhere. The paramedic/EMT system must be streamlined for

Table 1. PHASES OF CARE FOR CHILDREN IN EMERGENCY MEDICAL SERVICES⁹

Prevention	Pediatricians Family Practitioners Parents, children, and the general lay public
Access to Care	Parents Lay public (including schools, day care centers) Coordinated medically directed response system
Field Treatment	Parents and Lay public Paramedics and EMTs
Emergency Department	Emergency physicians and nurses Pediatric Emergency Specialists Trauma surgeons
Inpatient	Multiple specialty groups (including medical, nursing and psychosocial support)
Rehabilitation	Multiple specialty groups (including medical and psychosocial support and home outreach programs)

optimal function so that response time to acute medical illness and injuries can be minimized. Effective medical direction must be provided so that dispatch policies, mandatory equipment lists, and hospital destination policies address the needs of children.

Field Treatment. Field treatment involves both the paramedic/EMT and the lay public. Following a life-threatening event precious moments during which care should be initiated are lost and outcome potentially adversely affected if bystanders cannot perform cardiopulmonary resuscitation (CPR). Bystander CPR has been shown to increase survival for the adult patient with myocardial infarction. Although the results in the pediatric population are less favorable because of the nature of cardiac arrest in children, parents should still be encouraged to learn CPR. Parents who own swimming pools should take particular note of a recent study which supports the conclusion

that early aggressive resuscitation following a near drowning improves the chances for a favorable outcome.

The pediatric education of the general emergency physician was felt to be less than optimal in the past.

The extent to which pediatrics is included in the educational content of paramedic and EMT programs has been shown to be less than adequate.^{4,5} This must be corrected. Educational emphasis must also reflect the epidemiology of field care. A paramedic needs to learn about multiple trauma, seizures, and the management of respiratory distress. It is critical that the educational content of paramedic training curricula take these epidemiological factors into consideration and not overburden the prehospital care provider with information that is not pertinent to pediatrics.

Emergency Department. Most patients seen in this environment are brought to the hospi-

tal because of the perceived urgent nature of their problem. Nationally, the vast majority of pediatric patients are seen in general (non-pediatric) emergency departments, by a physician who is not a pediatrician. The pediatric education of the general emergency physician was felt to be less than optimal in the past. Efforts to correct this deficiency have been initiated,^{6,7} and guidelines for enhancing the ability of general emergency departments to care for children have been suggested. A combined emergency medicine and pediatric training program has been approved by the boards of both specialties. In some areas of the country, a voluntary system which categorizes emergency departments by their abilities to care for children has already been adopted. Transfer agreements which provide rapid access to specialized pediatric tertiary care centers need to be in place.

Inpatient Services. Inpatient services are the final common pathway of the acute phase of the emergency medical service system. Access to specialized pediatric tertiary care, when necessary, should be the right of every child. Although only a small percentage of patients will require triage to these centers, care must not be delayed. When possible, this should be accomplished in the prehospital phase, as in the case of the trauma or burn patient who can be delivered to a specialized hospital based on a clinical score done in the field. This is more problematic in the undifferentiated medical patient. It is extremely difficult to characterize severity of a given medical disease or, indeed, to even diagnose the disease prior to examination in a hospital. A tertiary care communication center with

qualified pediatric emergency medicine staff may be able to assist in this evaluation.

The last element of care is that of rehabilitation. Efforts need to be coordinated so that the child can be returned to society as quickly as possible with maximum function.

It is extremely difficult to characterize severity of a given medical disease or, indeed, to even diagnose the disease prior to examination in the hospital.

The Emergency Medical System can only be effective if there is active and coordinated participation in all phases of care. To accomplish this we must create an awareness within the medical community and the lay public of both the magnitude of the problem of childhood emergencies and their respective roles in the emergency care of children. The lay public should be directed to existing resources for learning the skills necessary to play an integral role in the Emergency Medical System. Cooperation between medical and related administrative organizations should be encouraged to enhance the overall function of the Emergency Medical Service System.

Rhode Island's Pediatric Emergency Medical Services System is composed of several key elements which share a common goal of quality care for children with acute illness or injury. Each level of the system, from lay public to intensive care unit staff, is essential to the effective delivery of pediatric emergency care. The components of the system, access and prevention, equipment and training, health care provision, and rehabilitation require plan-

ning and resource allocation. Through the state's involvement in several nationally recognized programs, improved training and education has occurred and there is promise for future progress in the prevention and management of pediatric emergencies.

A model for the training of prehospital care providers in pediatric care was developed at Children's Hospital National Medical Center in Washington, DC. Entitled Pediatric Emergency Medical Services Training Program (PEMSTP), the course was offered under a federal grant to representatives from all fifty states. From 1985 to 1987, Rhode Island enrolled three individuals who became PEMSTP instructors and helped to create the momentum for reform in the state's EMT training program curriculum. One major recommendation was the formation of a dedicated didactic session in the standard 140 basic-level EMT course to discuss pediatric medical and traumatic conditions and the special problems of caring for children under emergency conditions.

In cooperation with the American Academy of Pediatrics, the American Heart Association (AHA) has recently developed a Pediatric Basic Life Support (PBLs) course to standardize the skills of resuscitation of infants and children. This program recognizes the need to provide separate training for the management of pediatric patients, and emphasizes the role of parents and educators in accident prevention. In 1988, the Rhode Island Affiliate of the AHA sent representatives to a series of national meetings which introduced the PBLs program, acquiring two National Faculty members for the state. The PBLs program has been implemented

on a statewide basis, with emphasis on those institutions and organizations which provide care for children. The development of a population of basic level care providers into the state's general public is instrumental to the improvement of access to and delivery of emergency care to children.

Coincident with the formation of the PBLS program, a course for advanced level providers was also developed and introduced at the 1988 national conference. The Pediatric Advanced Life Support (PALS) course has as its goals the recognition of respiratory failure and shock, the primary pathophysiologic processes which lead to cardiopulmonary arrest in children. It emphasizes important advanced skills such as intubation and intraosseous infusion, and is structured around case presentations and practice resuscitations. In the summer of 1988, the Rhode Island Affiliate of the AHA formed the PALS Subcommittee composed of members from pediatrics, emergency medicine, nursing, and prehospital care. The group devised plans for the implementation of the PALS course on a statewide level, and thus far has trained over 100 physicians, nurses, paramedics, and emergency medical technicians. The participants have included staff physicians, residents, and nurses from Rhode Island Hospital's Emergency Department and Pediatric Intensive Care Unit, and also health care providers from most of the state's community hospitals and many private practitioners.

One outstanding example of progress for pediatric prehospital care came with the establishment of a modified PALS program (PALS-Plus) for the state's registered paramedics who, by successful completion

of the course, are authorized to perform intraosseous infusions in the prehospital setting. The initiative for this program came from several practicing paramedics who recognized the need for training in the intraosseous technique to obtain vascular access in critically ill children. In order to couple skill acquisition with appropriate assessment and management principles, the PALS program was made a prerequisite for paramedics wishing to perform intraosseous infusion. A supplemental didactic session and practical station were added to ensure adequate training in the intraosseous technique. A new protocol was issued to allow paramedics to perform intraosseous infusions on a select group of children with cardiac or respiratory arrest, or late stages of shock. This represents a significant advance in the capabilities of the state's paramedics to provide care to children with life-threatening medical problems. The funding for the first PALS-Plus program was provided through a generous grant from the Hasbro Corporation.

The development of a population of basic level care providers into the state's general public is instrumental to the improvement of access to and delivery of emergency care to children.

Another recent development for the state's paramedics is the creation and approval of protocols and standing orders for pediatric patients. These guidelines address the care of the pediatric patient suffering from such problems as burns, asthma, respiratory distress, and trauma. They provide standing

orders for certain medications and procedures, and outline the management of the patient in cardiac arrest. Included in the protocols is a section on neonatal resuscitation, and it is conceivable that paramedics may soon be trained in the technique of umbilical vessel catheterization.

Future priorities will include improved education of parents and the public regarding accident prevention, use of seat belts and car safety restraints. Community-based CPR training is a goal worth pursuing and begins with school and other public institutions. Primary care providers will benefit from participation in the PALS program and can protect against problems in their own offices with preparedness for pediatric medical emergencies.

For the prehospital care services, standardization of equipment and training should be further developed and formalized. The Medical Control System, responsible for the guidance and triaging of acute emergencies, requires further refinement for the management of pediatric patients. On-line medical control via a central communication center is the goal for a pediatric EMS system. In order to monitor compliance, proper quality assurance techniques are needed to identify problems and improve education. The development of basic level protocols will further the ability of the EMS system to provide care for children in Rhode Island.

References

- ¹ Shwartz G, Safar P, Stone V, et al, eds. Principles and practice of emergency medicine. Philadelphia: WB Sanders, 1986:553-619.
- ² Cummings RP, Eisenberg MS. Prehospital CPR: Is it effective? JAMA 253:2408-2412, 1985.

- ³ Clemmer TP, Orme JF, Thomas FD, et al. Outcome of critically injured patients at level I trauma centers vs full service community hospitals. *Crit Care Med* 13:861-3, 1985.
- ⁴ Seidel JS, Emergency medical services and the pediatric patient: Are the needs being met? II Training and equipping emergency medical service providers for pediatric emergencies. *Pediatrics* 1986; 80:8-12.
- ⁵ Seidel JS, Hornbein M, Yoshiyama K, et al. Emergency medical services and the pediatric patient: Are the needs being met? *Pediatrics* 1984; 73:769.
- ⁶ American Heart Association, American Academy of Pediatrics, Pediatric Advanced Life Support Course.
- ⁷ American College of Emergency Physicians, American Academy of Pediatrics, Advanced Pediatric Life Support Course.
- ⁸ Foltin G, Salomen M, Tunik M, et al. Developing prehospital advanced life support for children: The New York City experience. *Pediatric Emergency Care* Vol 6, 2:141-144, 1990.
- ⁹ Luten RC. The child in the emergency medical services system. *ACEP News* 8:12, December 1989.

Melvyn M. Gelch, MD

is pleased to announce

his participation in

Ocean State Physician's

Health Plan

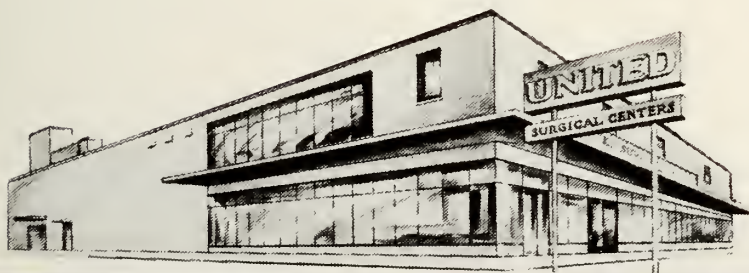
110 Lockwood Street
Providence, RI 02903

(401) 421-3650

There must be a good reason why
we've become the
trusted back-up
resource for more
Rhode Island
doctors (and their patients)
than anyone else.



*The Professionals in
Home Health Care Equipment*



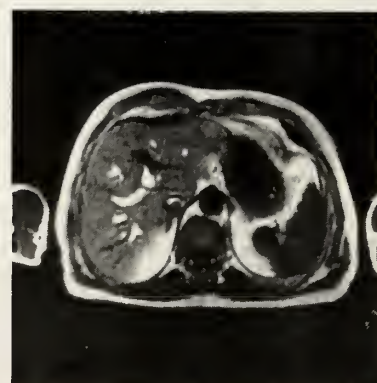
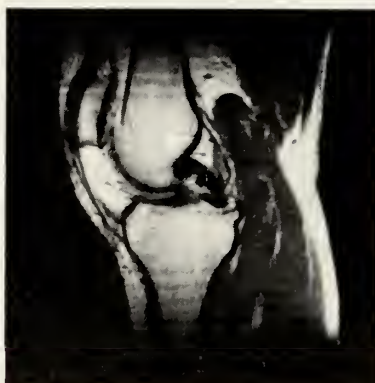
We carry just about EVERYTHING for Home Health Care . . . which means, everything a patient or convalescent needs to implement the doctor's treatment directions. For Ostomy and Oxygen needs to Orthopedic Appliances, Wheelchairs, Walkers and Hospital Beds, we're here to serve your patients. Our staff is knowledgeable and dedicated to supplying exactly "what the doctor ordered". We've been doing it dependably for many years.

That's how we've earned the trust of so many doctors.

Medicare and Third Party Claims
Accepted and Processed.

**380 WARWICK AVE., WARWICK
781-2166**

RI-MASS MRI, P.C. is pleased to sponsor
the
2ND WEDNESDAY
LECTURE SERIES



WHEN: The 2nd Wednesday
of each month
6:30 p.m. - 7:30 p.m.

WHERE: Marriott Hotel
Charles at Orms
Providence, RI 02904

THIS MONTH'S TOPIC:
"Oncological Applications of MRI
in the Abdomen and Pelvis"
Wednesday, September 11, 1991

NEXT MONTH'S TOPIC:
"Current Status, Recent Advantages
and Use of Gadolinium in the
Evaluation of CNS Disease"
Wednesday, October 9, 1991

TO REGISTER/CALL: 1 (800) 848-9661

The Effect of Race on Waiting Time in Two Urban Emergency Departments

Peter Kilmarx, MD
Yuan Fei Chen, MD
Carolyn McGrath, MD
Julio Porro, MD
Andrew Ross, MD
Kay Wagner, MBA
Tom Wachtel, MD

The relation between race of the patient and quality of health care services is a complex and emotionally charged topic.

The influence of race or ethnic background on health care access and quality has been the subject of numerous studies since the 1960s. This issue remains unsettled, given the complex interplay of biological, social and economic factors in medicine which confound it. Furthermore, studies that document differences in health care services according to race often do not evaluate differences in health outcome.

This study is an attempt to find evidence of racial bias in the setting of the emergency department (ED) in the form of

unequal waiting time. It has been observed by sociologists that ED staff make subtle judgments about patients' moral status and the legitimacy of their need for treatment.¹ In our own experience, a frequent complaint of ED patients is the excessive time taken to be treated. We assessed the total waiting time in the treatment area, the "put-through time" (PTT), as a measure of quality of care and hypothesized that potential differences in PTT may exist as a marker for racial bias.

Methods

We retrospectively reviewed the records of all patients seen during a consecutive five-month period at two urban EDs, February through June, 1989. Hospital A is in a large, university-affiliated, tertiary-care center. Hospital B is in a smaller, non-teaching hospital that serves a local, predominantly minority, lower socio-economic status community. In order to limit the

effect of severity of disease on PTT, we selected all patients with a defined diagnosis: small (less than five centimeters) laceration requiring sutures. All records with a discharge diagnosis of laceration were examined regardless of the laceration's location. We excluded cases with multiple lacerations; laceration length greater than five centimeters; lacerations resulting from intoxication, syncope, drug abuse or motor vehicle accident; and cases where any x-ray or laboratory test, or any consultation such as plastic surgery had been ordered. The ED chart is stamped with an electric clock when the patient enters the ED and again upon discharge. PTT was calculated as the difference of these times.

This paper represents a Department of Community Medicine research project while Peter Kilmarx and his colleagues were Brown University undergraduate medical students. The project was under the direction of Tom J. Wachtel, MD, who is Associate Professor of Community Health at Brown University, Providence, Rhode Island.

ABBREVIATIONS USED:

ED: emergency department
PTT: put-through time
SD: standard deviation

Since treatment of small lacerations is simple, standard and likely to represent only a small proportion of the patients' total time spent in the ED, differences in PTT would most likely represent differences in waiting time. Furthermore, no relationship should be expected to exist between time spent in the ED and outcome of case.

We collected data on age, sex, time of day (midnight-6:00 AM, 6:00 AM-noon, noon-6:00 PM, and 6:00 PM-midnight), day of the week, location of laceration, and type of insurance (dichotomized as "with", including private, HMO, workmen's compensation, or medicare; and "without", including medicaid or none). Medicaid was classified as "without" because medicaid in Rhode Island does not pay a professional fee to the treating physician in addition to the hospital reimbursement.

Patient race was recorded as white, black, Hispanic, Asian and other. Blacks, Hispanics, Asians and others were similar in all socio-demographic characteristics. Further, PTT was not different for blacks, Hispanics and other non-whites. Therefore, they were combined into a non-white category.

The χ^2 test was used to compare categorical variables, Student's *t* test was used to compare means, two way analyses of variance was used to compare means, adjusting for another categorical variable (eg, PTT by race, adjusting for time of day), and simple linear regression was used to compare two continuous variables (Pearson's correlation coefficient *R*). Stepwise multiple regression was used to evaluate the independent relationships between the various independent variables and PTT.

Results

Data on patient characteristics are presented in Table 1. Hospital A had more white patients; the white patients were older, more likely to be male ($p < 0.05$) and covered with insurance ($p < 0.0001$). All patients visited the ED more frequently in the PM hours, the nonwhites significantly more so than the whites ($p = 0.03$). Location of laceration and day of the week of ED visit were similar with regard to race. Hospital B had more non-white than white patients. The white patients were older, but the sex distributions were similar. Again, white patients were significantly more likely to be covered with insurance. As at Hospital A, significantly more non-whites visited the ED in the PM hours ($p = 0.02$) and no significant differences were noted in location of laceration or in day of the week.

The patient characteristics were analyzed for their relation with PTT (Table 2). PTT was on average considerably longer at Hospital A (114 minutes) com-

pared with Hospital B (80 minutes) ($p < 0.0001$). Therefore, the two hospitals were evaluated separately. Age had no effect on PTT (correlation coefficient $R = 0.12$ at Hospital A; $R = 0.04$ at Hospital B). Insurance status and sex had no significant effect on PTT at either hospital. Time of day had a clear and significant effect at both institutions, taking longer than average in the evening hours, when the volume is greater ($p = 0.0002$ at Hospital A, $p = 0.09$ at Hospital B). The PTT was 7 minutes longer at Hospital A for non-whites than for whites, a 6% difference which was not statistically significant. At Hospital B the PTT was 5 minutes longer for non-whites, also a non-significant 6% difference.

The time of day of a patient's visit to the ED is associated with both race and PTT. Most non-white patients visit the ED during the PM hours when PTT is longest. Therefore two-way analysis of variance using PTT as the dependent variable with race and time of day as inde-

Table 1.

PATIENT CHARACTERISTICS

		HOSPITAL A		HOSPITAL B	
RACE		WHITE	NONWHITE	WHITE	NONWHITE
TOTAL*	N (%)	313 (82)	70 (18)	120 (43)	156 (57)
AGE §	Mean ± SD	20 ± 18	15 ± 11	26 ± 19	20 ± 15
MALE SEX†	N (%)	226 (72)	42 (61)	888 (73)	110 (71)
WITH INSURANCE‡	N (%)	2335 (76)	21 (30)	71 (60)	45 (29)
TIME OF DAY ¥					
Midnight-6 AM	N (%)	41 (13)	5 (7)	12 (10)	14 (9)
6 AM-Noon	N (%)	64 (20)	6 (9)	28 (23)	16 (10)
Noon-6 PM	N (%)	98 (31)	28 (40)	46 (38)	67 (43)
6 PM-Midnight	N (%)	110 (35)	31 (44)	334 (28)	59 (38)

SD=Standard Deviation

* $p < 0.0001$ (hospital by race)

§ $p > 0.1$ (hospital A and B)

† $p < 0.05$ (hospital A), *p* NS (hospital B)

‡ $p < 0.001$ (hospital A and B)

¥ $p = 0.03$ (hospital A) $p = 0.02$ (hospital B)

Table 2. EFFECT OF PATIENT CHARACTERISTICS ON PTT

	PTT \pm SD	
	HOSPITAL A	HOSPITAL B
SEX		
Male:	114 \pm 54	79 \pm 51
Female:	115 \pm 55	82 \pm 53
INSURANCE		
With:	113 \pm 54	79 \pm 51
Without:	115 \pm 45	80 \pm 53
TIME OF DAY		
Midnight-6 AM	100 \pm 46	87 \pm 68
6 AM-Noon	95 \pm 41	76 \pm 44
Noon-6 PM	120 \pm 47	72 \pm 43
6 PM - Midnight	123 \pm 58	88 \pm 57
RACE		
White:	113 \pm 52	77 \pm 48
Nonwhite:	120 \pm 52	82 \pm 54

SD = Standard Deviation

pendent variables was performed to interpret the time of day stratification presented in Table 3. Again, PTT had no independent association with race at either hospital, by two-way analysis of variance or by t-test for each stratum. Multiple regression identified time of day

as the only significant independent predictor of PTT.

Discussion

The relation between race of the patients and quality of health care services is a complex and often politically and emotionally charged topic. Racial differences

in access to care have been documented in the literature. Kleinman et al² reported that blacks make fewer doctor visits than whites and that blacks use hospital clinics more frequently than private practitioners when compared to whites during the late 1970s. The 1982 national telephone survey data on access to medical care, presented by Aday and Anderson³ documents some progress in access but with persisting inequalities. The 1986 access study from the same source⁴ documents reversals in the previous gains in access. However, none of these data controlled for socioeconomic status or other factors which might confound the role of race. In another report of the same survey,⁵ Blendon shows that blacks make fewer ambulatory physician visits even when health status, age, sex, and presence of chronic or serious diseases are taken into account. He also notes that significantly more blacks than whites had to wait more than one half hour at their last ambulatory visit (25.1% vs 18.4%). This finding is relevant to the current study, but does not control for type of health care facility (eg, blacks are more likely to visit hospital clinics where the wait is traditionally longer than at private practitioners' offices).

In a study of coronary artery disease,⁶ Ford et al reported differences in care provided to whites and blacks. The authors found that black males experienced only one half the rate of angiography and one third the rate of coronary artery bypass graft surgery. Black females had 19% less angiography and 52% less surgery. The authors concluded that this is evidence of racial bias. However, this study

Table 3. THE EFFECT OF RACE ON PTT, STRATIFIED BY TIME OF DAY

	PTT \pm SD	
	HOSPITAL A	HOSPITAL B
Midnight-6 AM		
White:	98 \pm 46	96 \pm 71
Nonwhite:	113 \pm 44	80 \pm 67
6 AM-Noon		
White:	93 \pm 40	78 \pm 42
Nonwhite:	113 \pm 54	73 \pm 50
Noon-6 PM		
White	112 \pm 49	65 \pm 33
Nonwhite:	113 \pm 40	73 \pm 48
6 PM - Midnight		
White:	113 \pm 58	85 \pm 56
Nonwhite:	120 \pm 62	91 \pm 58

SD=Standard Deviation

did not control for socioeconomic status, type of insurance, or even patient preference which may affect the use of these procedures. Furthermore, the report presents no data on outcome. While one may conclude that these procedures are underutilized in blacks, without knowledge of outcome, one could also conclude that these procedures are overutilized in whites. Yergan et al examined the diagnosis of pneumonia using data from 17 hospitals.⁶ They found that non-white patients received fewer hospital services, an observation not explained by health status, source of payment, or site of hospitalization. However, no consistent difference in death rates were found. Therefore, while there was evidence of racial bias in these data from the early 1970s, there was no measurable difference in outcome. Flaherty et al⁷ focused on the issue of racial differences in the care of psychiatric patients, where subjects were matched for employment status, marital status, age and severity of illness. There were striking differences, including shorter stays for blacks, less recreational and occupational therapy, and a trend towards more medication orders as needed only and fewer privileges at discharge. Seclusion and restraints were more often used with blacks. They also found that white staff spent more time talking about white patients, and black staff about black patients. They concluded that there was real racial bias due to subtle stereotyping by the predominantly white staff.

In another study designed to identify a racial effect on physician performance, Rhee et al reviewed discharge data of 3,175 Asian-American patients from

242 general hospitals in Hawaii.⁸ They measured quality of medical care, appropriateness of admission and length of stay, according to level of compliance with criteria determined by expert physician panels. They found that patients' race had a very limited influence on physician performance; and while there was evidence of mutual racial selection by patients and physicians, the care received by patients of physicians of the same ethnic background was not different from that received by patients of physicians with different backgrounds. These data may not be applicable to other races.

In a study by Egbert and Rothman from 1977,⁹ it was determined from records at one hospital spanning the 1950s and 1960s that blacks were 2.2 to 4.3 times more likely than whites to be treated by a surgeon in training rather than a staff surgeon. The authors concluded that this was evidence of racial bias. However, economic factors may have accounted for much of the difference. Indeed, there was no significant difference when Medicaid patients were analyzed separately.

We found no evidence of racial bias in two urban hospital EDs as measured by waiting time.

Aday and Anderson offer the concept of equity in health care implying similar treatment for similar cases regardless of race. We tested the hypothesis that there is racial bias in the ED staff's treatment of patients as expressed by increased waiting time. We found no evidence of racial bias in two urban hospital EDs as measured by waiting

time. Had a more powerful study been performed to achieve statistical significance for a slightly longer waiting time of non-whites, we do not believe that a 6% difference is indicative of racial bias by emergency department staffs. Indeed, this translates into 7 minutes at one hospital and 5 minutes at the other. This study is limited to one measure of health care quality in two northeastern EDs. Other studies must be done before our finding of lack of racial bias can be generalized to the measures of quality or other geographic areas.

Summary

This study examines the relation between patient race and waiting time in two urban Emergency Departments, located in the northeastern United States. Consecutive patients presenting with lacerations make up the subjects in the study. In order to control for the effect of disease severity, we restricted the sample to patients presenting with small, single lacerations requiring sutures. Patients who were intoxicated, had experienced syncope, had been involved in motor vehicle accidents, or who required tests or consultation were excluded.

Taking socio-demographic (age, sex, insurance status) and clinical variables (location of laceration, time of day, day of week) into account, we found no substantial difference in total time spent in the Emergency Departments between whites and non-whites.

References

- ¹ Roth JA. Some contingencies of the moral evaluation and control of clientele. The case of the hospital emergency service. "The social organiza-

- tion of medical care; A critical prospective". P Conrad and R Kern, editors, St. Martin's Press, New York, New York 1986:322.
- ² Kleinman JC, Gold M, Makuc D. Use of ambulatory medical care by the poor: another look at equity. *Med Care* 1981; 10:1011-1021.
 - ³ Aday L, Anderson RM. The national profile of access to medical care: Where do we stand? *Am J Public Health* 1984; 74:1331.
 - ⁴ Freeman HE, Blendon RJ, Aiken LH, et al. Americans report on their access to health care. *Health Aff* 1987;6:6.
 - ⁵ Blendon RJ, Aiken LH, Freeman HE, et al. Access to medical care for black and white Americans: A matter of continuing concern. *JAMA* 1989;261:278.
 - ⁶ Ford E, Cooper R, Castaner A, et al. Coronary arteriography and coronary bypass survey among whites and other racial groups relative to hospital-based incidence rates for coronary artery disease: Findings from NHDS. *Am J Public Health* 1989;79:437.
 - ⁷ Yergan J, Flood AB, LoGerfo JP, et al. Relationship between patient race and the intensity of hospital services. *Med Care* 1987; 25:592.
 - ⁸ Flaherty JA, Meagher R. Measuring racial bias in inpatient treatment. *Am J Psychiatry* 1980;137:679.
 - ⁹ Rhee S, Lyons TF, Payne BC. Patient race and physician performances: Quality of medical care, hospital admissions and hospital stays. *Med Care* 1979;18:737.
 - ¹⁰ Egbert LD, Rothman IL. Relation between the race and economic status of patients and who performs their surgery. *New Eng J Med* 1978;297:90.
 - ¹¹ Aday L, Anderson RM. Equity of access to medical care: A conceptual and empirical overview. *Med Care* 1981;19:4.

Address correspondence to:
Tom J. Wachtel, MD
 Division of General Internal Medicine
 Rhode Island Hospital
 593 Eddy Street
 Providence, RI 02903
 (401) 277-5428



NEW, HOSPITAL-BASED PROGRAM

Helping Your Patients Prevent Heart Disease

Memorial Hospital has established a multidisciplinary program — the Heart Disease Prevention Center — to help physicians evaluate and treat cardiac risk factors in patients with coronary disease and people at high risk.

Drawing upon our 10-year experience with the Pawtucket Heart Health Program, we can help your patients improve their lipid profile, control their weight and blood pressure, exercise regularly, and stop smoking. New data indicate that coronary lesions can often be reversed with careful lipid management.

We believe many of your patients can benefit from this program. Rhode Island has the nation's third-highest, age-adjusted mortality rate from IHD, according to the Centers for Disease Control.

Our goal is to work with you to design an approach specific to your patient's needs. Your choices range from a simple evaluation to long-term management for high-risk patients.

Physicians will receive timely reports on all patients they refer to the program.

For more information, please call 722-6000, ext. 2258.



**HEART DISEASE
PREVENTION CENTER**



MEMORIAL HOSPITAL
of Rhode Island

"The Heart of Health Care"

PHYSICIAN OFFICE SUPPLY COMPANY ESCO DRUG CO., INC.



110 Lockwood Street
Providence, Rhode Island

Mark S. Goldberg, R.Ph., B.S., M.B.A.
Pharmacy Manager
421-3250
FAX 621-9889

- vaccines
- injectables
- chemotherapeutics
- paper products
- surgical dressings
- specialty compounding:
 - progesterone suppositories
- trained orthotic fitter
- Jobst, Vairox, Warm and Forms
- RI Leading Diabetic Supplier

* BEST PRICES AROUND *

CALL FOR A PRICE QUOTE

STORE HOURS

Monday thru Friday 8:00 AM to 6:00 PM

Saturday 9:00 AM to 1:00 PM

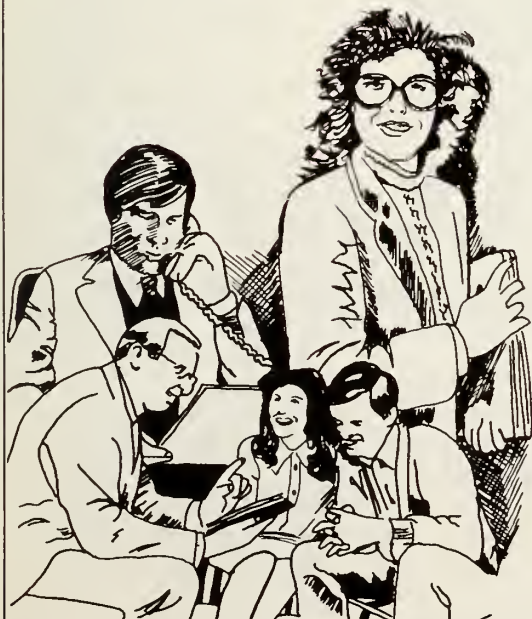
Call Escos Drug for assistance with Hepatitis B educational programs and information on new practices regarding Hepatitis B vaccinations.

RIMS Insurance Brokerage Corporation

*Insurance Professionals serving
Health Care Professionals.*

We do it better!

- Because our purpose is to serve RI doctors and allied health care professionals.
- Because our staff has 15 years of solid experience in medical liability underwriting.
- Because our board of directors is composed predominately of doctors with the same problems, stresses and concerns as you.
- Because we support political action in matters of health care benefiting all Rhode Islanders.
- Because our bottom line is superior service.



Phone 272-1050 — ask for Shirley and
Learn How We Can Do It Better For You!

RIMS Insurance Brokerage Corporation
The Experts in Medical Liability Insurance

Now offering up to 2M/4M limits for select insureds.

Also offering workers' compensation.



RIMS Insurance Brokerage Corporation
One Hayes Street, Providence, Rhode Island 02908
Phone (401) 272-1050 FAX (401) 272-1051

For excellent response in the treatment of
duodenal ulcers...

AXID[®] nizatidine

has the right answers

- Rapid epigastric pain relief^{1,2*}
- Fast and effective ulcer healing^{2,3,4}



AXID
PASSES THE ACID TEST

*Most patients experience pain relief with the first dose.
See adjacent page for references and brief summary
of prescribing information.

NZ-2943-B-149347

© 1991, ELI LILLY AND COMPANY

AXID® (nizatidine capsules)

Brief Summary: Consult the package insert for complete prescribing information.

Indications and Usage: 1. Active duodenal ulcer—for up to 8 weeks of treatment. Most patients heal within 4 weeks.

2. Maintenance therapy—for healed duodenal ulcer patients at a reduced dosage of 150 mg b.i.d. The consequences of therapy with Axid for longer than 1 year are not known.

Contraindications: Known hypersensitivity to the drug. Because cross sensitivity in this class of compounds has been observed, H₂-receptor antagonists, including Axid, should not be administered to patients with a history of hypersensitivity to other H₂-receptor antagonists.

Precautions: General—1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Dosage should be reduced in patients with moderate to severe renal insufficiency.

3. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests: False-positive tests for urobilinogen with Multistix® may occur during therapy.

Drug Interactions: No interactions have been observed with theophylline, chlorazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450 enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increased serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility: A 2-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a 2-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a 2-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C: Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in 1 fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spinal bifida, hydrocephaly, and enlarged heart in 1 fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Use in Elderly Patients: Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events were due to the drug.

Hepatic: Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to 3 times the upper limit of normal, however, did not significantly differ from that in placebo patients. All abnormalities were reversible after discontinuation of Axid. Since market introduction, hepatitis and jaundice have been reported. Rare cases of cholestatic or mixed hepatocellular and cholestatic injury with jaundice have been reported with reversal of the abnormalities after discontinuation of Axid.

Cardiovascular: In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in 2 individuals administered Axid and in 3 untreated subjects.

CNS: Rare cases of reversible mental confusion have been reported.

Endocrine: Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic: Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H₂ receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental: Sweating and urticaria were reported significantly more frequently in nizatidine than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity: As with other H₂-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other: Hyperuricemia unassociated with gout or nephrolithiasis was reported.

Eosinophilia: Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis does not substantially increase clearance of nizatidine due to its large volume of distribution.

PV 2091 AMP
[091190]

References

1. Data on file, Lilly Research Laboratories.
2. Scand J Gastroenterol. 1987;22(suppl 136):61-70.
3. Scand J Gastroenterol. 1987;22(suppl 136):47-55.
4. Am J Gastroenterol. 1989;84:769-774.

NZ 2943-B-149347

Additional information available to the profession on request



Eli Lilly and Company
Indianapolis, Indiana
46285

LAW OFFICE OF HERBERT M. ADAMS, J.D.

GENERAL LAW PRACTICE MEDICAL COLLECTIONS

GOVERNOR FINANCIAL CENTER

P.O. Box 2502

295 Governor Street

Providence, Rhode Island 02906

(401) 421-1364

When you don't know all
the medicines your patients are taking,
protecting their health
is a crap shoot.

Counseling patients about all their
medicines improves their odds of
getting well and staying well.



EVERYONE WINS WHEN YOU TALK

Send me a free Medicine Counseling Kit.

Name _____

Organization _____

Street _____

City _____ State _____ Zip _____

Mail to:

National Council on Patient Information
and Education
666 Eleventh Street, NW, Suite 810
Washington, DC 20001
To fax your request -- (202) 638-0773

Hispanic Utilization of a South Providence Emergency Room

David S. Narita

National surveys reveal that, in general, black, and Hispanic minorities contribute significantly to ER use. Why do they choose to receive their regular medical care in the ER?

The hospital emergency room (ER) is one of the fastest growing sectors of our health care system.¹ Its growth, however, is not only the result of an increased need for urgent medical treatment but because many are using them as their sole source of primary medical care.

National surveys reveal that in general, black and Hispanic minorities contribute significantly to ER use.^{2,3} Why do they choose to receive their regular medical care in the ER? This paper addresses this question by providing observations made of the Hispanic community which utilizes the services of a hospital emergency room in South Providence, Rhode Island.

Location of the Study

South Providence is undergoing rapid change because of the influx of a large, predominantly Hispanic immigrant population.⁴

David S. Narita was a senior undergraduate Brown University student when he undertook this supervised study. He is presently a medical student at the University of Cincinnati.

The Hispanic community which surrounds St Joseph Hospital, Our Lady of Providence division (OLP), is primarily Puerto Rican, Dominican, and Guatemalan. OLP's 97-bed unit serves over 22,000 inpatients annually. Out-patient services, which treat about 84,000 patients each year, consist of thirteen clinics in addition to a full service, 24-hour emergency room. A recently established Community Outreach Department at OLP supports one full-time Spanish interpreter who aids in communication between Hispanic patients and their English-speaking providers.

The Express Care Unit (ECU) of the emergency room was formed to relieve the main ER of patients who did not require urgent medical treatment. The unit is open daily from 11:00 AM to 7:00 PM seeing 30-40 patients per day. It is staffed by one nurse and one physician.

Sources of Data

My observations are based primarily on three sources; hospital records, personal inter-

views with the patients and staff of St Joseph Hospital, and participation within and observation of the emergency room services of the hospital.

During a three-month interval in 1989, I interviewed Hispanic patients while they were waiting for ER services. The interviews loosely followed a questionnaire and were conducted primarily in Spanish. For three months preceding and during my patient interviewing, I worked in the ECU taking patient histories. This time gave me an opportunity to speak directly with the patients concerning their medical conditions and observe patient-staff interaction.

The response given to me by the patients greatly limited the data collected during my interviews. Although I explained that I was a student, because of my

ABBREVIATIONS USED:

ECU: Express Care Unit
ER: Emergency Room
OLP: Our Lady of Providence (St Joseph Hospital)

dress and language, I was seen as part of the hospital by some of the patients, therefore prompting the "right answer" to many of my inquiries. Some questions simply went unanswered.

Observations

Of the near 6,000 visits made to the OLPER during the months of January and February 1990, 28% of emergency room use was by members of the Hispanic community. Whites accounted for 43% of all visits while Blacks composed 26% of ER use. In contrast, between March and May of 1989, Hispanics formed only 22% of ER use. (Whites: 47%, Blacks: 23%).

The Hispanic community which uses the ER is primarily young, newly immigrated, and poor.

The Hispanic community which uses the ER is primarily young, newly immigrated, and poor. The average age of this

population was 19.5 years (Black 26.1 years, White: 41.4 years, see Figure 1), with 55% foreign-born. A large, young population born in New York (13.2% of the total Hispanic patient population, mean age 1.8 years) shows their probable secondary migration into Providence. Hispanic immigration into Providence has been recent as seen in the mean age of Rhode Island-born patients: 4.3 years. Over half of the Hispanic patients were on welfare. Those more apt to use the hospital ER lived close to the hospital and came on weekdays. Bad weather did not significantly affect the pattern of use.

Hispanics were no more likely than the general population to use the ER repeatedly. For the months of January and February 1990, the average number of ER visits per registered patient for the general population was 1.16, while the Hispanic average was 1.19, (White: 1.13, Black: 1.20).

Every person interviewed stated health-related concerns as their reason for coming to the

hospital. Of twenty people interviewed in depth, seven frequented the various clinics in or around the hospital, five used the ER for all their medical problems, five stated that they lacked a regular source of care, and only three had a regular family physician. People stated that the amount of paperwork required, long waiting times, inadequate transportation, and language barriers hindered their use of the hospital's services. Eighty percent of the patients I spoke with did not understand or speak English well.

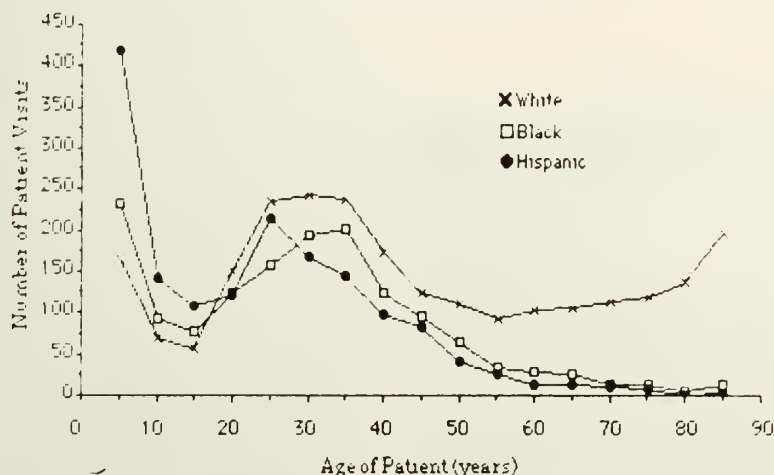
Because of differences in language, patients misunderstand both the physician's questions and instructions resulting in suboptimal care.

Because of differences in language, patients misunderstand both the physician's questions and instructions resulting in suboptimal medical care. For example, one eleven-year-old boy contracted trench foot when his mother insisted that he "soak his feet" for hours in obedience with the perceived physician's instructions. Another child became severely constipated as a result of taking her topical medication orally.

Apart from one woman who used a lemon, salt, and menthol poultice to treat bleeding and swelling, I did not encounter any alternate Hispanic views of health care which negatively affected their health or their reception of medical treatment. Rather, I believe the Hispanic culture affects health care at a more subtle level.

In Latin America, the doctor is expected to help the patient through physical and spiritual treatments and medication.

Figure 1. Age Structure of St Joseph Hospital OLPER Patients by Race for the months of January and February 1990



Healing occurs through these actions, making the role of the provider active while the patient is passive. At St Joseph Hospital, the patient, as well as the physician, is expected to have an active role. Unfortunately, Hispanic patients often fail to acknowledge their contribution in maintaining their own health or in aiding their recovery.

Knowing that their directions may not be heeded does not, of course, motivate health care providers to invest their time and energy into explanations.

In my observation at OLP, very few Hispanic patients followed up on previously prescribed care, whether it was to see another physician, buy and use certain medications, or even wait a little for their bodies to heal. People were less likely to follow directions after they left the unit because of their belief that everything which was required for healing had already been done during the hospital visit. Knowing that their directions may not be heeded does not, of course, motivate health care providers to invest their time and energy into explanations. This lack of communication results in still more frequent returns to the emergency room by Hispanic individuals.

In addition to an insufficient understanding of the patient's role in health care, it is widely held within the Hispanic community that it is good to see a doctor for any severity of illness, from trivial complaints to medical emergencies. These views of the passive patient role and the frequent use of medical services represent a retention of health care habits which were practiced in their countries of origin.

Economic status is yet another

major factor affecting the use of the ER. For impoverished patients without any form of coverage, choices on where to spend limited resources might postpone necessary medical treatment. The OLP policy of not turning down patients because of their inability to pay helps these individuals who come to the hospital. Welfare has also freed a large percentage of Hispanic patients from the financial constraints of medical care.

Discussion

The choice made by the Hispanic patient to use the hospital ER frequently finds its roots in patient roles and help-seeking habits which differ from those held by the majority of Rhode Islanders. Hospitals are now being forced to revise the range of their services to accommodate national changes in their clients.

The establishment of community clinics has helped meet the need for a regular source of medical care apart from the private physician. Yet inaccessibility to treatment at these clinics because of off-hours and the need for appointments limit their use by the Hispanic community. These gaps in care have fueled the development of the ER as their regular source of care.

Recommendations

1. *The employment of more bicultural, bilingual staff.* An inability to speak English complicates communication at every stage of entry and treatment for the Hispanic patient. More attention needs to be directed towards language translation as the number of Spanish-speaking individuals in Providence increases. Bi-cultural staff not only aid in translation, but also have a better understanding of how the Hispanic

patient thinks making them more able to explain treatment in a culturally appropriate and effective way.

2. *The development of further walk-in clinics.* The increased staffing of clinics will reduce waiting times and patient burden on the staff. 24-hour service would be ideal. Development also includes understanding the clinic as a primary source of care. How can services be improved to offer greater continuity in care and lower costs?

3. *Further education of the Hispanic community in the use of medical services.* They can save valuable resources and time by learning how to make medical decisions without requiring a visit to the doctor.

The observations of this study represent national trends in Hispanic health care. In general, Hispanics frequently use the ER as a regular source of care,^{1,3} are often on public assistance,^{3,5} and struggle with language barriers.^{6,7} Because of the striking variance among Hispanic ethnicities (35), applications of this study are best made in communities with similar ethnic compositions.

In general, Hispanics in the United States form a young, poor, recently immigrated community struggling to adapt to our health care system. The hospital ER provides a logical point of entry in this system. Its 24-hour operation and appointment-less service provides easy access which is especially appealing to the Hispanic individual. With welfare removing financial barriers for Hispanics and interpreters aiding with language difficulties, the ER becomes the most convenient place to receive medical care.

Outpatient departments such

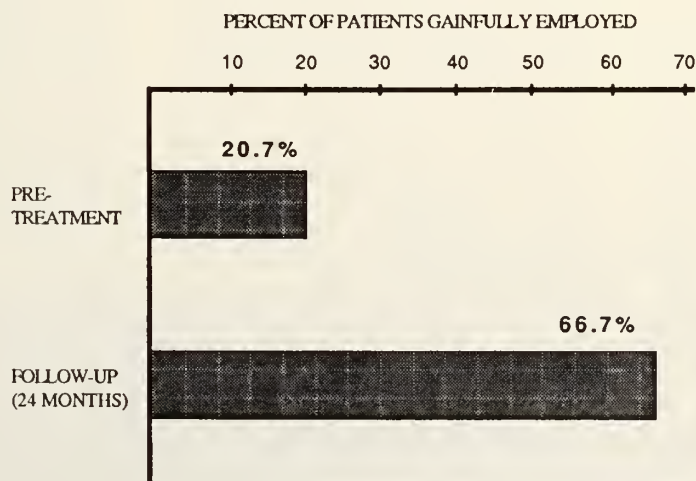
as clinics and the ER are crucial components of the Hispanic health care system. They are not only major sources of medical treatment, but also serve as interfaces between themselves and the novel US way of life.

References

- ¹ White-Means, Shelley L., Thornton, Michael C., and Yeo, Jung Sung: Sociodemographic and Health Factors Influencing Black and Hispanic Use of the Hospital Emergency Room. *Journal of the National Medical Association* 81(1):72-80, Jan. 1989.
- ² Anderson, Ronald M., Giachello, Aida L, and Aday, Lu Ann: Access of Hispanics to Health Care and Cuts in Services: A State-of-the-Art Overview. *Public Health Reports* 101(3):238-252, May-June 1986.
- ³ Schur, Claudia L, Bernstein, Amy B, and Berk, Marc L: The Importance of Distinguishing Hispanic Subpopulations in the Use of Medical Care. *Medical Care* 25(7):627-641, Jul 1987.
- ⁴ Chinoy, Ira. The New Rhode Islanders. *The Providence Journal Bulletin*; Friday, January 19, 1990.
- ⁵ Trevino, Fernando M, and Moss, Abigail J. Health Insurance Coverage and Physician Visits Among Hispanic and Non-Hispanic People. Health-United States 1983. DHHS Publication No. (PHS) 84-1232. US Government Printing Office, Washington DC, 1983.
- ⁶ Hu, Dale J and Covell, Ruth M. Health Care Usage by Hispanic Outpatients as a Function of Primary Language. *The Western Journal of Medicine* 144 (4):4904-4930, Apr 1986.
- ⁷ Manson, Aaron. Language Concordance as a Determinant of Patient Compliance and Emergency Room Use in Patients with Asthma. *Medical Care* 26(12):1119-1128, Dec 1988.
- ⁸ Davidson, Stephen M. Understanding the Growth of Emergency Department Utilization. *Medical Care* 26(2):122-132, Feb 1978.

The author expresses his deep thanks to St Joseph Hospital and its Emergency Room staff for permission to undertake this study and for their unfailingly helpful guidance during this project.

"CHRONIC PAIN DOESN'T HAVE TO MEAN CHRONIC DISABILITY FOR YOUR PATIENTS..."



The Chronic Pain Treatment Program
(401) 751-9150

Institute for Behavioral Medicine
120 Wayland Avenue
Providence, Rhode Island 02906-4318

Back from the Gulf:

An Interview with Joseph L. Pfeifer, III, MD

Margaret Coloian, MSJ

Most of all Joe Pfeifer remembers the camaraderie established during long hours of idleness in the tent he shared with ten other reservists, all members of the Navy's Fleet Hospital 6 (FH6) unit, stationed in Awali, Bahrain.

His first experience of active military duty, earlier this year, had not been very active. Fortunately.

Dr Pfeifer is no stranger to chaos. As chief of trauma at Rhode Island Hospital, Dr Pfeifer hardly sits still long while on duty. Yet that's what he and 80 other physicians from FH6 finally forced themselves to get used to—doing nothing but wait for a ground war and the anticipated casualties it would bring. Having spent three months in the Gulf, Dr Pfeifer is now back at Rhode Island Hospital and recounts his days abroad to the *Rhode Island Medical Journal*.

He remembers one serious injury which occurred when "we witnessed a missile that hit a Dharan barracks." Several of the physicians in his unit cared for a seriously wounded reservist in the attack. Earlier a Scud missile fired overhead and was quickly intercepted by a Patriot, the

sound of which is permanently etched in his memory. It was thought that once the ground war began, FH6 and the two other units like it, would be deluged with up to 150 casualties per hour.

Reading trauma texts and letter writing filled in much of the time after the medics, including surgeons, pitched in to construct the hospital. FH6 and many hospitals like it are prepackaged and have to be assembled by teams, a task which took 10-12 days of the first days there. Some 500 beds strong, and encompassing 28 acres, the hospital functioned with 1,000 staff. Its capabilities as a working facility were extensive, limited only in not being able to supply Swan Ganz catheterization. Overall, there were 18,500 military beds in the Gulf at the time, and 20,000 activated Navy reservists, half of whom were medical personnel.

"What was so amazing to me was to be part of putting the hospital together, of having this capability and seeing how it can be used on a smaller scale for disasters like earthquakes elsewhere," Dr Pfeifer said.

But most casualties were taken to FH15, the fleet hospital situated in Jubail, Saudi Arabia, closest to combat areas. Often times, FH6 staff served as consultants within the Bahrain area to other medical military facilities.

FH6 was comprised not only of the general surgeons (two of whom had trained in trauma), but also seven orthopedists, two neurosurgeons, two urologists, two ENTs, two ophthalmologists, two gynecologists and one plastic surgeon. There were also internists, anesthesiologists, radiologists and allied health professionals. Well prepared for combat injuries, hospital staff



LOW CENSUS: Casualty receiving entrance of the hospital assembled by FH6 personnel.

Margaret Coloian, MSJ, is Director of Communications and Editor of Rhode Island Medical News, Rhode Island Medical Society, Providence, Rhode Island.

turned their sights to the minor injuries of men and women serving in the Gulf, injuries like strains and sprains and sunburn.

"The Fleet Hospital would have been able to do the job assigned. We were to stabilize patients and send them to hospitals in the US and Europe. Lots of doctors wanted to do more for the patients but that's not what the hospital was designed to do," he said.

Dr Pfeifer is "embarrassed" by all the post-war hoopla, the parades, the gifts, the recognition. He says he doesn't deserve any of it. In fact, he adds that the very first part of his Gulf experience might even have been considered a vacation. After landing in Bahrain, officials discovered that designated living sites were not yet ready to accept much of FH6.

Enter the Cunard Princess to the rescue. Conveniently docked nearby, the luxury cruise vessel opened its doors gratis for three nights to 500 service people, and pampered them with fine cuisine and much-appreciated recreation until the tent barracks could be erected.

In no time at all, Dr Pfeifer's tent, dubbed "49 Scud Row", was up and ready to accept him and his tent-mates. Overnight, his diet deteriorated from cruiseline cuisine to dehydrated, 3,000 calorie and fat and sodium-loaded MREs (Meals Ready to Eat). Before fresh local food was introduced, the unit survived on MREs, which some blamed for weight increases.

When the ground war was over, Dr Pfeifer began touring Bahrain, and its modernized capital Manama, an opulent, exotic city he likens to Dallas. Rolls Royces and gold jewelry are everywhere, he said.



TENT LIFE: Dr Joe Pfeifer (middle) in front of his residence of three months, "49 Scud Row". Posing with him are other reservists from FH6.

Overall, Dr Pfeifer believes our accomplishments in the Gulf have served to foster a better appreciation for Americans. "The Arabs respected what we did and the way we did it. And this has built credibility for us there," he says.

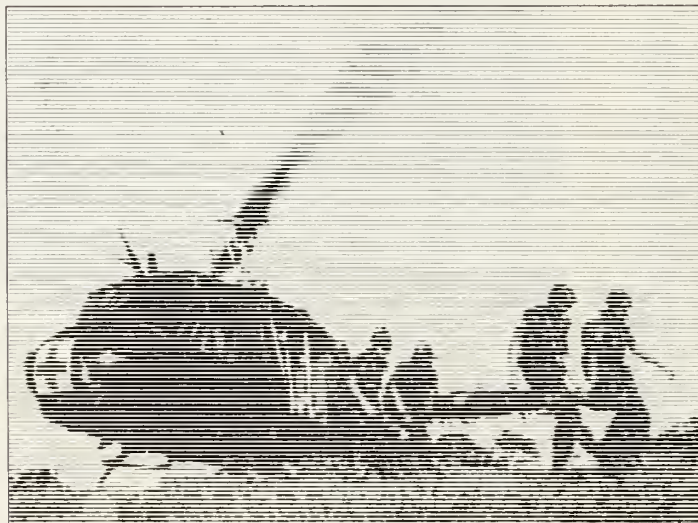
"This country can be proud of doctors, nurses, dentists, and

other medical personnel who served, who left their hospitals or their academic institutions to prove we could provide first class care. I personally have felt pride in serving with them."



BAHRAIN BUDDIES: Dr Joe Pfeifer, third from left, flanked by other medical reservists from FH6.

Lead a double life.



The Army Reserve can help you get away from the everyday routine and add a little adventure to your life on a part-time basis.

Take a break once a month with the Army Reserve and experience a different kind of medicine, with opportunities and challenges you won't find in civilian practice.

- You'll work with top, dedicated professionals.
- You'll have flexibility in how and when you participate.
- You'll be offered conferences and continuing education.
- You'll have opportunities for military training in areas like Advanced Trauma Life Support, Parachuting, Flight Medicine and Mountaineering.
- You'll have the rank and privileges of an Army officer.

If you'd like an exciting change of pace, consider the Army Reserve. For more information, contact one of our experienced Army Reserve Medical Counselors. They can arrange for you to talk to an Army Reserve physician and visit a Reserve Center or medical facility.

Call collect: 203-624-5325

Or write: Cpt. John Grimes

U.S. Army Reserve Medical Dept.
414 Chapel Street
New Haven, CT 06511

BE ALL YOU CAN BE.®
ARMY RESERVE

STOMACHS: A Mnemonic for Mental Health Referral

Shawn Cooper, PhD, MPH

Specific entry into the mental health system ordinarily begins with the individual recognizing that he or she has some significant, subjective adaptive problem.

Although a high percentage of patients see their doctors for essentially psychological rather than medical reasons, physicians vary in the degree to which they actually refer patients for psychological or psychiatric consultation. Many primary care physicians provide psychological care to their patients by utilizing combinations of supportive, behavioral and pharmacologic intervention.

Specific entry into the mental health system ordinarily begins with the individual recognizing that he or she has some significant subjective adaptive problem. This awareness may develop because of discomfort, such as anxiety, depression or substance use disorders; or some significant person in his or her life may suggest the need for psychological intervention. This person might be a spouse, parent, employer, teacher or the person's physician.

A reasonable model for the

physician to consider in dealing with decision-making about mental health consultation is that of a gradient or continuum¹ which may be conceptualized as a change from one extreme of any variable to another extreme of that variable. This concept can be applied to many domains, but three of relevance to physician decision-making in regard to mental health problems are those of: a) the severity of the patient's adaptive problems; b) the degree of awareness or acceptance on the part of the patient of problems he or she may be experiencing; and c) the nature of the patient's communication about the problem to his or her physician.

The first gradient may range from no significant adaptive problems whatsoever through extremely severe problems which may interfere with virtually all aspects of the patient's life. The second gradient may vary from no awareness or acceptance by the patient of any problem at one pole to clear and focused awareness and acceptance of one or more specific problems at the other. The third gradient may involve nonverbal,

perhaps somatic or behavioral, expression or communication at one pole, somewhat disguised or vague communication in the middle and clear, well articulated verbal language at the other.

The physician can be of assistance to his or her patients when thinking of a mental health referral by using the mnemonic device STOMACHS, with each letter representing a question the physician should consider and if possible discuss with the patient regarding a potential referral to the mental health system. Although each letter represents a topic to be discussed, the actual order of discussion might vary.

The first question the physician can ask is: "Should I refer this patient?" To answer this question, the physician can use the cue word SACS (contained in the word STOMACHS) and systematically assess the patient on the three continua noted above: **S**everity, **A**wareness and **C**ommunication **S**tyl. Depending on where the physician sees the patient on these continua, the physician may decide whether or how to approach re-

Shawn Cooper, PhD, MPH, is Assistant Psychologist at the Mental Health Service, Harvard University, and in private practice in Providence, Rhode Island.

ferral of the patient. Often, listening empathically to the patient's concerns and then simply asking, "Have you thought of going into therapy or getting some professional help for this problem?" can suffice to obtain the patient's acknowledgment that therapy is indicated.

A second question involves the Type of therapy, which can involve a discussion of whether behavioral, dynamic or some integration of these,² and whether individual, marital or family therapy would be most appropriate for the patient's problem. Behavioral treatment is primarily focused on the specific symptoms displayed and tends to be ahistorical and typically not focused on the underlying meaning or origins of the patient's behavior. Psychodynamic therapies, in contrast, ordinarily attempt to uncover ideas and feelings which may be thought to underlie and motivate patient's maladaptive behavior, and these approaches often involve efforts at determining the historical basis for presently experienced problems.

Similarly, therapy may involve only the identified patient, or it may include the patient with one or more of his or her significant others: spouse, child or entire family system.

A third question to consider is the Outcome or Objective of treatment; this would involve a discussion of exactly how the patient would be different after therapy. Thus, to the extent that the patient can recognize or articulate a problem, this discussion would help the patient formulate exactly how he or she might envision a successful outcome of treatment.

A fourth question pertains to the patient's Motivation for psychological treatment; that is how willing is the patient to con-

sider altering his or her behavior or to seek therapy? Individuals who may need intervention but who are resistant often fear that therapy will drastically change them. The physician may help such individuals explore treatment by reminding them that therapy will ordinarily not change a person very drastically; that the patient will be in control of the change process; and that an initial exploration of possible treatment does not mean that the patient must proceed through a lengthy period of therapy.

A fifth question to consider is the Area of the patient's concern; this involves a clear delineation of the precise problem. Although it is at times difficult for the patient to identify exactly what his problems may be, even beginning to help the patient focus his thinking can facilitate handling of a mental health consultation.

A sixth question is that of Communication between the physician and the mental health provider. Although often the physician may have extensive knowledge about the patient's difficulties, discussion of the kind and frequency of communication anticipated between the physician and mental health provider may be quite important to the patient.

The seventh question is How the patient will pay for therapy. This involves issues of insurance and any requirements for disclosure or preauthorization that the patient's insurance company may have, and this discussion can assist in determining whether the patient must be referred to an insurance-sponsored group, an agency or can be referred to a private therapist.

The last question is that of a Specific provider to whom the

physician might want to refer the patient. A discussion of that person's therapeutic competence for the patient's particular problem or for relating to the kind of person the patient is may facilitate the referral.

Although the mnemonic STOMACHS can remind the physician of the issues to deal with, the natural sequence of topics might be: the patient's specific problem and his or her status on the three continua; whether to refer; the patient's motivation for change; the type of treatment; the objective of the treatment; how the patient will pay for the treatment; a specific provider; and communication between the physician and the mental health provider.

The above mnemonic strategy is directly usable if the physician is dealing with an adult patient. If the physician is dealing with a child or adolescent, the same issues are relevant, although the physician needs to consider them with respect to the child/adolescent and family.

Although the suggested approach will require some degree of physician time, addressing these issues with the patient prior to or during the referral process can make psychological intervention an integral part of the physician's care as well as making the patient's expectation for a therapy experience more realistic and hence hopefully more beneficial. Such an approach can help the process of mental health referral for the patient, the physician and the mental health provider.

References

- ¹ Cooper, S. The gradient in psychotherapy. *The Beh Therap* 14:109-110, 1991.
- ² Babcock HH. Integrative psychotherapy: Collaborative aspects of behavioral and psychodynamic therapies. *Psychiat Annals* 18:271-272, 1988.

**You treated
little Johnny
for measles in
kindergarten,
chicken pox in
3rd grade, mono
in high school.**

**But what can
you do for his
HIV today?**

People with HIV are special patients with specific needs. That's why it helps to have experience with HIV when treating an infected patient—the kind of experience doctors find at Clinical Partners.

Clinical Partners is a group of healthcare professionals dedicated to helping patients live with HIV. We are alone in the complete array of services we provide to physicians, employers and insurers of those living with HIV. Our early intervention averts costly hospital stays, while increasing patient care and support.

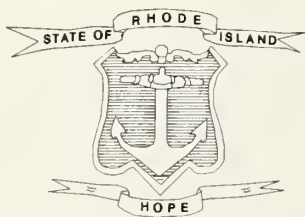
Operating successfully in Boston, New York and Los Angeles, Clinical Partners is pleased to announce the first anniversary of our Providence office, under the expert guidance of Linda Durand NP, RNC and Deborah Matson CISW, MSW.

We want Rhode Island physicians to know Clinical Partners is here to help, and here to stay. As the patient's primary physician, you can benefit from our knowledge and experience, which is available to help you treat HIV infection and AIDS.

To find out how Clinical Partners can be your partner in treating HIV patients, call our Providence office today at 454-8880 or 1-800-285-8880.

Clinical Partners

Helping people make choices about HIV.



HEALTH BY NUMBERS

Rhode Island
Department of Health
H. Denman Scott, MD, MPH
Director of Health

Use of Hospital Emergency Departments for Routine Medical Care

Many visits to hospital emergency departments involve the provision of medical care in non-emergency cases. Such care can be provided more cost-effectively in other settings, such as physicians' offices, health maintenance organizations, community health centers, and hospital outpatient clinics, and therefore represents a misuse of resources. In 1990, 2.1% of the respondents to the Rhode Island Health Interview Survey reported that hospital emergency rooms (ERs) were the place they usually went when they were "sick or in need of advice about health." Thus an estimated 21,000 Rhode Islanders regard the ER as their regular source of care, up 40% from the 1985 estimate of 15,000 persons.

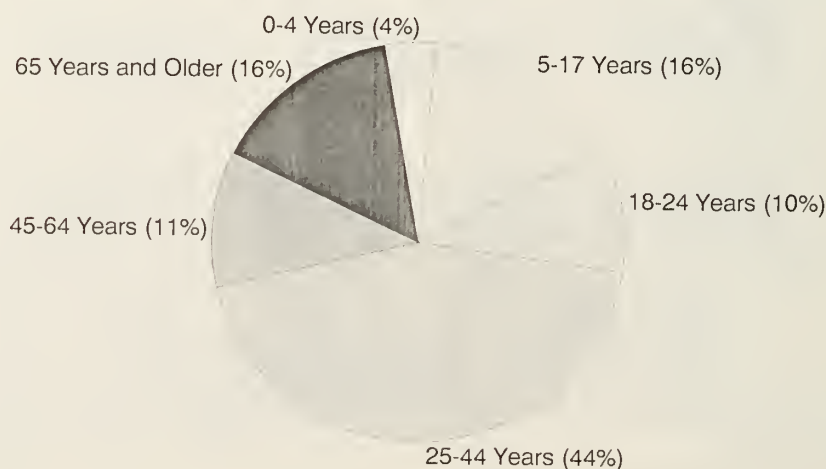
The population using ERs for routine medical care consists primarily of adults and includes relatively high proportions of racial and ethnic minority groups. Four out of five ER users are age 18 or older, and the largest age group is those ages 25 to 44, who comprise 44% of this population (Figure 1). There are nearly equal numbers of males (49.3%) and females (50.7%) in this group. The percentages of ER users that are Black, Asian, and Hispanic are three or more times as large as

their percentages in the entire survey population (Figure 2). Persons using ERs for routine care are also more likely to lack health insurance coverage or to be covered by Medicaid than the population as a whole (Figure 3).

Use of the ER for routine care appears to impede access to medical care in some ways. Although this population was only slightly more likely to report not having seen a physician in the past year than the general population (17.6% with no visits vs 17.0%), they reported significantly fewer doctor visits in the

past year on average (2.6 visits per person vs 3.7); the only group reporting lower utilization were persons with no regular source of care (1.7 visits per person). In addition, they were relatively less likely to have seen a physician for a check-up or preventive care in the past year (71% vs 74% generally). Only 1.5% of this population said there had been a time in the past year when they had needed medical care and could not get it, a figure similar to the overall rate of 1.8% and perhaps reflecting the availability of ER care at all times of day.

Figure 1. Age Distribution of Persons Reporting Hospital Emergency Departments as their Regular Source of Care, Rhode Island, 1990



Submitted by the Office of Health Statistics, Jay S. Buechner, PhD, Chief. Health by Numbers is edited by Jay S. Buechner, PhD, and William J. Waters, Jr., PhD.

Figure 2. Race and Ethnicity of Persons Reporting Hospital Emergency Departments as their Regular Source of Care, Rhode Island, 1990

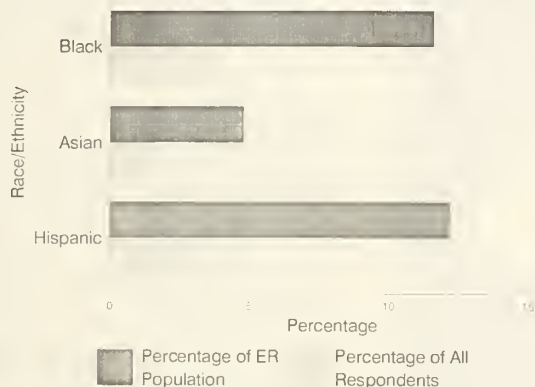
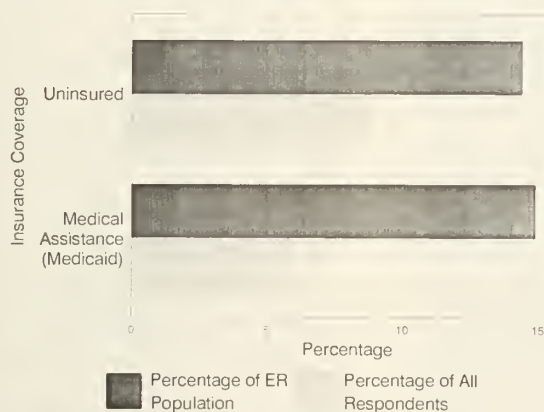


Figure 3. Insurance Coverage of Persons Reporting Hospital Emergency Departments as their Regular Source of Care, Rhode Island, 1990



In summary, a small but increasing segment of Rhode Island's population relies inappropriately on hospital emergency departments for routine medical care. In doing so, they appear to limit their access to regular preventive care and to receive less ambulatory care overall than persons in other settings.

Sources of Data: Rhode Island Health Interview Surveys, 1985 and 1990.

YOCON®

YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it, however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

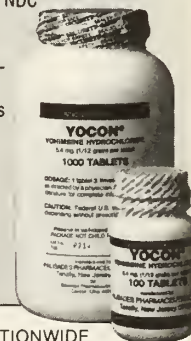
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

Rev. 1/85



AVAILABLE AT PHARMACIES NATIONWIDE

**PALISADES
PHARMACEUTICALS, INC.**

219 County Road
Tenafly, New Jersey 07670
(201) 569-8502
1-800-237-9083

AIM HIGH

PUT YOUR MEDICAL CAREER IN FLIGHT.

Discover the thrill of flying, the end of office overhead and the enjoyment of a general practice as an Air Force flight surgeon. Talk to an Air Force medical program manager about the tremendous benefits of being an Air Force medical officer:

- Quality lifestyle, quality practice
- 30 days vacation with pay per year
- Support of skilled professionals
- Non-contributing retirement plan if qualified

Discover how to take flight as an Air Force flight surgeon. Talk to the Air Force medical team today. Call

**USAF Health Professions
TOLL FREE
1-800-423-USAF**

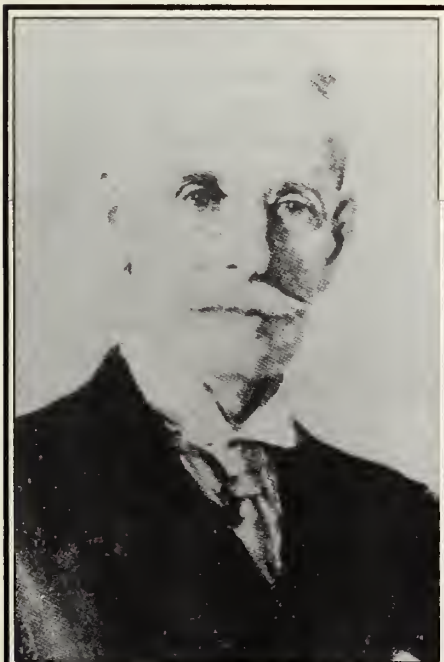


Rhode Island's Contributions to Medicine

By almost any standard Charles V. Chapin, MD, is one of the truly great Rhode Islanders of all time. His life and works have already been ably described by others.^{1,3}

Charles V. Chapin, MD

Chapin was born and died in Providence, Rhode Island (1856-1941). He served as the Providence Commissioner of Health from 1884 to 1931 and succeeded the famous Edwin Snow as the Providence City Registrar serving from 1888 to 1932. Chapin held numerous local, state, regional, national, and international positions of distinction, and he received many personal awards. In his day Charles Chapin was considered the



Charles V. Chapin, MD

leading municipal health official in the United States, and Providence was the premier local public health system. Chapin organized the first municipal bacteriological laboratory (1888). He served as President of the Rhode Island Medical Society (1907-1908) and President of the American Public Health Association (1926). Also, he was the first President of the American Epidemiological Society (1927). The former Providence City Hospital and the current Rhode Island Department of Health Laboratory were dedicated to Chapin. The Charles Value Chapin Oration is the centerpiece of the Annual Meeting of the Rhode Island Medical Society. One of the most remarkable things about Charles Chapin was that he did not seek out prestigious positions and distinctions; quite the contrary, they sought him out. He often turned down national opportunities. He was not ambitious in the organizational/social sense; rather, he was committed to the advancement of science and community service.

Charles Chapin's career was nestled in history between the discovery of pathogenic bacteria (Koch and Pasteur identified

the anthrax bacillus in 1876) and the advent of sulfonamides (introduced in 1935). Penicillin was not available until World War II at about the time of Chapin's death.

The most common communicable diseases in Chapin's time included tuberculosis, diarrhea, scarlet fever, diphtheria, and typhoid fever. Chapin ushered in the "first epidemiologic revolution" through his pioneering thought and work, which resulted in the 1910 publication of his pioneering text, *The Sources and Modes of Infection*. When Chapin's career began, most people including health professionals believed that diseases arose spontaneously from the mysterious miasmas of decaying filth and were transmitted indiscriminately through the air. In those days, it was thought that germs lived indefinitely in inanimate objects. As a result most public health effort was invested on general sanitation, engineering, and nuisance abatement. There was a pervasive fetish for environmental cleanliness. The focus was on the elimination of trash, garbage, dead animals, dirty stables, sewage-polluted streams, foul privy vaults, cesspools, drains,

soil pipes, and dung hills. Chapin was skeptical and critical of this conventional wisdom. Early in his career, he had been taught by Dr Edward Janeway at the Bellevue Hospital to approach communicable disease on a rational, objective basis employing field observation and laboratory analysis to discover the etiologic facts. In refreshing and innovative ways, he linked field investigation and laboratory research to unmask and debunk old traditions and archaic dogma about communicable disease.

Through the use of field research and laboratory analysis, Chapin often initiated new ways of attacking disease. He demonstrated the effectiveness of mechanical (ie, aluminum sulphate) filtration of water. He showed the superiority of steam and formaldehyde over sulfur disinfection. He concluded that flies were not much of a factor in the spread of typhoid and diarrhea in cities with adequate sanitation. He instituted point-of-purchase rather than point-of-production inspection of milk; and he required that the bacterial count of milk be published by the dealer. He showed that Pawtuxet River water polluted with excreta caused a typhoid outbreak in Providence.

During his career, Chapin conducted epidemiologic investigations of diphtheria, scarlet fever, typhoid fever, anthrax, smallpox, tuberculosis, measles, and many other diseases. He was interested in the relative importance of dirt, air, food, drink, insects, income, and personal contact in the etiology of disease. Chapin was the first person in the United States to apply the principles of septic nursing techniques in a hospital for contagious diseases (ie, the Providence City Hospital). This permitted the mixing of patients

with different communicable diseases on the same ward without cross contamination.

At the beginning of Chapin's career, "fomites, filth, and airborne disease" had been fought with terminal disinfection of households (ie, post infection fumigation) and sanitation of the physical environment. Through his laboratory and field epidemiology, Chapin ultimately arrived at the conclusion that infections were spread mainly through personal contact with human carriers. He stated, "It is infected persons not infected things that are to be feared."⁵ Chapin used health education to promote personal hygiene and cleanliness. In the *Providence Journal-Evening Bulletin* and professional publications, he promoted the idea that "personal cleanliness is less expensive than municipal cleanliness, and is within the reach of all."⁶ In 1901, Chapin provided school children with the following rules of personal hygiene:

Do not spit if you can help it.
Never spit on a slate floor or sidewalk.

Do not put the fingers into the mouth.

Do not pick the nose or wipe the nose on the hand or sleeve.
Do not wet the finger in the mouth when turning the leaves of books.

Do not put pencils into the mouth or wet them with the lips.

Do not put money into the mouth.

Do not put pins into the mouth.

Do not put anything into the mouth except food and drink.
Do not swap apple cores, candy, chewing gum, half-eaten food, whistles or bean blowers, or anything that is put into the mouth.

Never cough or sneeze in a

person's face. Turn your face to one side.

Keep your face and hands clean; wash the hands with soap and water before each meal.⁷

This clear departure from the prevailing school of thought earned Chapin indignation, hostility, and antagonism from much of the health and civic establishment; but, also, applause and enthusiastic support from many of his public health colleagues around the country. In the end, Chapin's ideas caught on and personal cleanliness, asepsis, and concurrent disinfection replaced environmental sanitation, strict isolation, and terminal disinfection as the communicable disease control measures of choice.

While Chapin's substantial identification of the importance of personal hygiene was a major contribution in its own right, his main contribution was his methodological standard of scientific rigor, which he firmly established for public health systems. In Chapin's mind there had to be a logical and factual connection between health statistics, field investigations, laboratory analysis, and the structure and practice of public health.

His own words express his commitment to critical science:

All established forms of preventive medicine should be questioned. The more established and the older they are, the more they should be questioned.⁸

Science can never be a closed book. . . We should never be ashamed to change our methods; rather, we should be ashamed never to do so. We should try new things, but show common sense about it.⁹

Charles V. Chapin was extraordinary in his commitment to scientific truth and public service. He never abandoned his epidemiologic principles or his beloved city of Providence. Students of public health and medical progress, especially those in Rhode Island, should know his life and work.

William J. Waters Jr., PhD

References

- ¹ Cassedy, James H. Charles V. Chapin and The Public Health Movement, Cambridge: Harvard University Press, 1962.
- ² Goldowsky, Seebert J. "Charles V. Chapin: His Influence on Concepts of Public Health," *Rhode Island Medical Journal*, Vol. 62, August, 1979, pp. 313-323.
- ³ Cassedy, James H. "Charles V. Chapin Re-Visited: An Appreciation," *Rhode Island Medical Journal*, Vol. 66, January 1983, pp. 41-44.
- ⁴ Models of Public Health Workers: Charles V. Chapin, Hermann M. Biggs, and Joseph W. Mountain, "Editorial", *Journal of Public Health Policy*, September, 1985, pp. 300-306.
- ⁵ Cassedy, James H. Charles V. Chapin and The Public Health Movement, p. 114.
- ⁶ *Ibid.*, p. 114.
- ⁷ *Ibid.*, p. 113.
- ⁸ *Ibid.*, p. 168.
- ⁹ *Ibid.*, p. 239.



HOSPICE CARE OF RHODE ISLAND, INC.

"A Special Kind of Caring"

A licensed hospice providing a 24 hour day program of home care to terminally ill patients and their families.

Physician inquiries and referrals are welcome

You will remain the primary physician and interact with our medical directors and staff. Hospice Care of Rhode Island offers a full team approach, pain management and symptom control and is Hospice Medicare certified.

PROVIDENCE
800 BUTLER DRIVE - 272-4900

ISLAND HOSPICE
51 TOURO STREET - 846-3599

WASHINGTON COUNTY
118 POINT JUDITH ROAD - 789-5200

SPACE AVAILABLE

Ideally suited for
Emergency Medical Clinic
Located in West Warwick, RI

CONTACT
PINGA REALTY

828-7035

Computers don't have to be complicated or expensive. Scrooge Macdoc® is a Macintosh based office management system for the solo practitioner that tracks income, and prints forms and bills at the click of a button. Designed by a Doctor to be used by Doctors, it is incredibly simple and powerful, but costs less than 1/2 the price of comparable systems! In addition to a no-risk trial period, there is a 30 day money-back guarantee. For information or a demonstration contact:



David A. Lowe, M.D.
615 Jefferson Blvd
Warwick, RI 02886
738-6865 or 884-2410

HAYFEBROL™

**allergy-relief formula
Sugar-Free**

For fast relief of nasal and sinus congestion, sneezing, itchy and watery eyes due to hayfever and other allergic conditions. Can be used for sodium and sugar-restricted diets.

**1-800-638-SCOT
1-401-942-8555**

If not available in your area, order direct.

**Scot-Tussin
Pharmaceutical Co., Inc.
Cranston, RI 02920-0217**

**For Rx only:
Tussirex SF, 10 mg.
Codeine/5 ml.
Alcohol-Free
Natural Coloring**

HAYFEBROL™

**allergy relief
formula**

Sugar-Free

For fast relief of nasal and sinus congestion, sneezing, itchy and watery eyes and other respiratory allergies of the common cold or sinusitis. Can be used for sodium restricted diets.

**FOR CHILDREN AND
ADULTS**

Alcohol-Free
Sodium-Free
Dye-Free



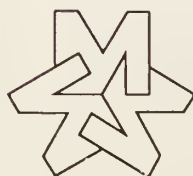
4 FL. OZ. (120 ml)

A critical health problem for your patient. A difficult problem for you to treat.

The Miriam Hospital Weight Management Service offers treatment programs addressing all levels of obesity. With over 10 years' experience in obesity treatment and research, our multidisciplinary team provides the resources needed for safe, medically monitored weight loss and for long-term success in maintaining weight loss.

For more information on our programs, or to refer a patient, call:
(401) 861-0870

Portions of our programs may be covered by health insurance.



The Miriam Hospital Weight Management Service
Division of Behavioral Medicine
An affiliate of the Brown University Medical School

*Are your
investments
as successful
as you are?*

*If your hard
work and suc-
cess have allowed*

*you to build a portfolio of \$250,000 or
more, we'd like to work with you.*

*account admin-
istrator who will
act as your per-*

*sonal financial advisor and you'll
be backed by a team of investment*

[Professionally Managed Investments]

*Because at Citizens Bank, our
Trust and Investment Management
team can provide you with the excep-
tional service, experience, and perfor-
mance that will help you get the most
from your investments. You'll have an*

*managers with a history of proven
investment success.*

*To put us to work for you call
Malcolm Starr at 456-7445. Because
there's never been a better time
for Citizens.*

Trust and Investment Management Services



THE RHODE ISLAND MEDICAL JOURNAL

The Official Organ of the Rhode Island Medical Society
Issued Monthly under the direction of the Publication Committee

VOLUME I
NUMBER 1

PROVIDENCE, R. I., JANUARY, 1917

PER YEAR \$2.00
SINGLE COPY, 25 CENTS

THE RHODE ISLAND MEDICAL JOURNAL HERITAGE

Ninety Years Ago (September, 1901)

E.D. Chesebro, MD writes an article on the etiology of acute peritonitis in children and provides the specific diagnostic and pathologic details in a personally observed case. He distinguishes primary peritonitis (limited to the peritoneum) from secondary (associated with or dependent upon diseases of organs adjacent to the peritoneum). Simple peritonitis, he defines as the result of trauma alone or aseptic operations, the rupture of an ovarian cyst or the twisting of the pedicle of a pelvic tumor. The presented case was that of a nine-year-old female, perfectly healthy, who developed an unrecognized empyema which was succeeded by a conventional attack of chicken pox. Ten days later, acute gastrointestinal symptoms with septic intoxication supervened and proved fatal in less than three days. An autopsy disclosed that the immediate cause of death was due to acute general serofibrinous peritonitis "from staphylococcic and streptococcic infection." A loculated empyema was also visible. In determining the origin of perito-

neal infection the author states: "It seems probable that . . . the peritonitis resulted from the extension of bacteria from the empyema through the lymph channels of the diaphragm."

An article on the menopause: natural and artificial is written by W.A. Risk, MD. The author defines the menopause as "... a name for those numerous conditions that may arise at the closing of the menstrual function." He observes that removal of the uterus does not produce the menopause but simply amenorrhea and sterility. In the natural state, he observes, it is the consequence of the decline of the sexual organs, nutritive supply and innervation. And if these changes are harmonious, "... we would expect a typical normal menopause." In the in-harmonious forms of menopause, the author warns of mental depressions, weaknesses and insanity. For these mental disturbances he recommends sedatives, nerve tonics and circulatory stimulation with strychnine and digitalis. Accompanying indigestion may be controlled with gastric sedatives. In considering such signs as facial flushing and fullness of the head, "The older practitio-

ners employed blood letting . . . and it might be done today with the robust patient with good results but it could not be kept up. We should deplete with salines or mercurials if the liver does not act well." The headaches, he suggests, are best relieved with bromides; and the tendency to acne "relieved by the use of arsenic in the form of Fowler's solution after meals."

Fifty Years Ago (September, 1941)

The lead article is written by LS McKittrick, MD describing carcinoma of the right colon, its diagnosis and principles of treatment. The author bases his observations and recommendations upon 179 collected cases, representing the experience at Massachusetts General Hospital from 1910 to 1941. Presenting symptoms, in his experience, most frequently consist of pain (sometimes local, sometimes peristaltic), weakness and constipation. Amongst ancillary tests, he suggests hemoglobin levels and repeated examination of the stool for occult blood. "Barium enema is the most im-

portant single diagnostic procedure." In terms of treatment, he suggests a two-stage procedure making it possible to operate upon certain poor-risk and advanced cases. The remainder of the article consists of technical descriptions of the advocated surgical procedure and the pre- and post-operative care needed.

A paper describing the present status of knowledge concerning sulfadiazine is presented by WJ Doyle, MD. The paper is published just six years after the introduction of sulfanilamide for the treatment of human streptococcal infections. With this family of agents, says the author, we are approaching Ehrlich's ideal, "namely, drugs that are maximally parasitotropic and minimally organotropic." Other studies have shown the efficacy of the drug in such infections as those caused by the meningococcus, pneumococcus, streptococcus and gonococcus. He concludes: "1. Sulfadiazine has proved less toxic than the other sulfonamides in animal experiments and is at least as effective in experimental infections. 2. Sulfadiazine is readily absorbed from the gastrointestinal tract in man and high blood levels are easily obtained. 3. The excretion of this drug is slower than that of the others and conjugation occurs to a lesser extent. 4. Sulfadiazine penetrates into the spinal fluid and other body fluids in effective concentrations. 5. The common toxic symptoms occurring with other sulfonamides have also occurred with sulfadiazine but are noticeably less frequent and less severe. 6. Clinical use in nearly 500 cases has shown it to be remarkably effective in pneumococcus, staphylococcus, and meningococcus infections. It also gives promise of being useful in other

conditions."

Drs EJ West and DWJ Bell describe two local cases of fatal dog bite and provide the reader with principles of treatment and indications for antirabic vaccination. They conclude: "1. Rabies is a disease common to dogs, but transmitted to man only on infrequent occasions. 2. Once the symptoms of rabies have begun to develop in humans, there is as yet no known treatment which is effective. Therefore prophylactic measures are at present the only means of combatting rabies. 3. The prophylactic treatment is in itself not entirely without danger and should be given when indicated but not indiscriminately."

The editorial discusses, in depth, the recent trial of the American Medical Association for "conspiring together for the purpose of restraining trade" and the adverse decision of the lower court. The editorial concludes, "If this verdict holds, what happens to the right of the district medical society to decide on the qualifications for membership of a candidate for election to the society? What happens to the right of the American Medical Association to approve the decision of a district society? The right of approval is the only power of the American Medical Association. Loss of the power of approval would be the beginning of the end of the great humanitarian work which the American Medical Association has conducted for the past ninety-five years."

Announcement is made of Civil Service Commission examination for medical positions. Junior medical officer positions provide a yearly salary of \$2,000.

Twenty-Five Years Ago (September, 1966)

Iago Galdston, MD delivers the first annual Alex M. Burgess Lectureship in a lecture entitled, "In Medical Education Quis Custodiet Custodes?" In a lengthy and learned paper, the author describes the evolution of medical education from shamanism through Hippocratic medicine, through the role of the medieval universities to the rise of humanistic studies and inductive science. He comments that the first stipulation of the Hippocratic Oath is devotion to the teacher, "... to reckon him who taught me this Art equally dear to me as my parents, to share my substance with him, to look upon his offspring in the same footing as my brothers and to teach them this Art if they should wish to learn it without fee or stipulation." In discussing the advent of the full-time medical school teacher, he quotes from Abraham Flexner's autobiography that when he proposed "... the creation of a full-time teaching staff to the trustees of Johns Hopkins, the trustees accepted the plan, which incidentally carried a premium of a million and half dollars, while within the medical faculty the scheme was unanimously endorsed by the laboratory men, but among the clinicians there was a rift - they feared a loss of experience. Osler was among those who opposed the full-time scheme."

Drs T. Micholoughi, S. Simon, A. Paull, and PJM Healey critically evaluate the single-unit transfusion in a community hospital. Based upon a retrospective survey of the 1963-64 uses of transfusion in Memorial Hospital they conclude that of the single-unit transfusions, "... 62% had positive indications for

use, 30.8% were unjustified, and 7.2% had questionable indications." They state further, "A high percentage of single-unit transfusions indicates some misuse of blood."

Drs J.A. Galardy and A. Colella describe the clinical and pathologic features of a case of gastric ulcer perforating the thoracic aorta with fatal hemorrhage ten years after esophagitis.

Drs A.A. Savastano and J.H. Dwinelle discuss advances in the use of physical medicine modalities in the treatment of trauma.

Dr JA Yacovone provides a paper on the basic dental concepts as related to a health education program in the schools.

The lead editorial discusses the tangible benefits of a new nation-wide preschool program for underprivileged children called Head Start.

BLACK HORSE FARM

Exeter

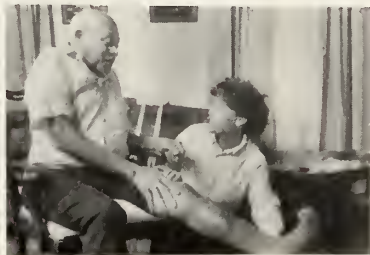
Country homesites, 4+ acres
Idyllic setting next to 600-acre
wildlife refuge
Convenient to major highways
About 30 minutes to Providence

Low Rate Mortgages
Available to Qualifiers

REDUCED PRICES
NOW \$69,900

CLEO E. LACHAPELLE
REAL ESTATE
(401) 732-5759

VNA of Rhode Island



Physicians have trusted in the Visiting Nurse Association since 1900, for their experience, dedication and commitment in bringing health care home to thousands of patients each year.

Thanks to You
We Bring Health Care Home!

- skilled nursing
- private duty home care
- home infusion therapy
- VNA Hospice program
- durable medical equipment and supplies
- home health aides
- pediatric services
- nutrition counseling
- rehabilitation



331-8842
Member Agency United Way

YOUR TREES DESERVE THE BEST OF CARE

Trees are valuable assets.
Don't entrust their future to less
than caring professionals.
Bartlett leads the way in tree care
with trained arborists, research facilities,
nationwide experience and specialized
equipment. For a professional evaluation
of your tree care needs, call today.
There is no obligation.



All Phases of Tree Care: Residential and Commercial

LOCAL OFFICES:
Seekonk, MA
508-336-9330
North Kingston, RI
401-884-2885



Scientific tree care since 1907
BARTLETT
TREE EXPERTS
Corporate Office: STAMFORD, CT

Backed by the Bartlett Research Laboratories and Experimental Grounds
Charlotte, North Carolina

©1991 Bartlett Tree Experts

BOOK REVIEW

Ethics

Ethical Dilemmas in Pediatrics. A Case Study Approach. Edwin N. Forman, MD, Rosalind Ekman Ladd, PhD, 142 p. New York, Springer-Verlag. 1991. \$42.00

This small yet substantial book will be highly valued by the experienced teacher facing a sometimes daunting task, and by the young student exasperated that the professors do not have foolproof answers, and by the dawning awareness that at the crucial moment of deciding a highly complex ethical question s/he may likely be left all alone to solve an unprecedented problem.

The doctor's dilemma is much older than George Bernard Shaw's play. Given the unique, individual nature of every patient, every human being, decisions are often difficult to make. In not so ancient times, the healer's more rational view might run counter to prevailing belief and superstition. Burning at the stake may have been one professional hazard. At the court of an autocratic ruler, the physician's head was at risk, were he to fail in the cure. Don't present day concerns pale somewhat in comparison?

Yet, later on, exponentially developing technology began to render decision-making ever more difficult. It became apparent that not only the answers, but even the questions were ambiguous, hard to pin down, depending on individual situations and on the everchanging societal, legal and emotional climate of acceptance.

"Teaching" ethics? That elusive concept, viewed in so many

ways, depending on the eye that peers into the kaleidoscope. After demonstrating that this is quite impossible, the authors proceed to do it in an entrancingly simple, but by no means simplistic way. A physician, professor of pediatrics at Brown University and Rhode Island Hospital, and a professor of philosophy at Wheaton College, jointly succeed because their experience emerges from the gut feeling of hands-on practice, rather than from a mahogany desk in an ivory tower. (The Latin meaning of "doctor", is after all, teacher.) One senses that their reasoning is sharpened by familiarity with Socratic and Talmudic methods of thought and exploration.

As it should be, Drs Forman and Ladd do not give answers. They try to elucidate some generally valid ethical principles, they stimulate your curiosity by intriguing real-life teasers, and go on placing their emphasis on process, on communication, on clinical values and on mentioning possible alternatives. By the time you are ready to be given an easy solution, you realize that this is the point where you have to start thinking on your own. Teaching at its best!

The table of contents touches on a variety of dilemmas faced in everyday practice. Much attention is given to the paternalistic, albeit well meaning, tendency in physicians' training, as it clashes with the easily forgotten basic right of self-determination of the patient. (The parents' mostly, in this instance, and to a refreshing extent the child's own capabilities.)

Nowadays rarely heard of notions (eg, the physician's virtues and character) are brought to bear to inculcate respect for the centrality of the patient's own values. The mature wisdom of the physician's knowing that s/he does not have to have all the answers, is appropriately emphasized. Sharing the reality of ongoing, especially developmental uncertainties with the parents who observe the child every day, makes for honest communication and a better clinical outcome.¹

Practical details are discussed: confidentiality, costs, disagreements on diagnosis and treatment, unavoidable legal issues which are apt to cloud the patient-physician relationship.

The straightforward way of talking about the passive and active termination of life that society is being forced to confront with increasing urgency, is particularly impressive. Emphasis on the quality of life, without sentimentality and with the inescapable logic of ethical principle, carries the day.

The volume's usefulness is enhanced by an excellent bibliography, an index and a glossary: references necessary for refining informed decision making.

So lean back and enjoy a few hours of stimulating reading, at the end of which you feel you have learned something.

Hugo Taussig, MD

Reference

- ¹ Forman MA, Hetznecker W. The physician and the handicapped child. Dilemmas of care. JAMA 1982; 247:3325-3326.

There's more to Portable X-Ray Service than X-Rays.

Yes, our main business is to provide you with fast, efficient, diagnostic X-Ray services, but we have much more to offer . . . including a staff of people who really care.

- Diagnostic X-Ray Services
 - EKG
 - Holter-Monitoring*
 - Ultrasound Services*
 - Same day reporting
 - 24 Hour Service
 - Seven days a week
- *by appointment only



We service the entire Greater Rhode Island area:

- Nursing and Convalescent Homes
- Shut-ins and Private Home Patients
- Post Surgical Patients

PORTABLE X-RAY SERVICE OF RHODE ISLAND

Certified by the R.I. Department of Health. Reimbursement
provided by Medicare, R.I. Blue Shield and Medical Assistance.

100 Highland Avenue
Providence, R.I.
331-3996

120 Dudley Street
Providence, R.I.
331-3996

154 Waterman Street
Providence, R.I.
273-0450

38 Hamlet Avenue
Woonsocket, R.I.
766-4224

INFORMATION FOR AUTHORS

Manuscripts: Manuscripts will be accepted for consideration with the understanding that they are original contributions, have never been published or submitted elsewhere, and are submitted only to the *Rhode Island Medical Journal*.

Specifications: Manuscripts must be original typed copy (not all capitals) on 8½ × 11 inch firm typewritten paper, double-spaced throughout (including title page, text, acknowledgments, and references) with margins of at least one inch and using but one side of each page. Tables, charts, and legends should be submitted separately from the text, and referred to by number (ie, Fig. 1) within the text. Subheadings must be inserted at reasonable intervals to break the typographic monotony of the text. Pages must be numbered consecutively. Italics and boldface print are never used except as subheadings.

Abbreviations: The *Journal* attempts to avoid the use of jargon and abbreviations. All abbreviations, especially of laboratory and diagnostic procedures, must be identified in the text.

Title Page: All manuscripts must include a title page which provides the following information: (1) a concise and informative title; (2) the name of the author or authors with their highest academic degree (ie, MD, PhD); (3) a concise biographical description for each author which includes specialty, practice location, academic appointment, and primary hospital affiliation; (4) mailing address and office telephone of principal author; (5) mailing address of author responsible for correspondence or reprint requests; (6) source of support if applicable.

Illustrations: Authors are urged to use the services of professional illustrators and photographers. Drawings and charts should always be done in black ink on white paper. Clear, black and white 5 × 7 glossy photographs should be submitted, and such illustrations numbered consecutively and their positions indicated in the text. Original magnifications should be noted. Illustrations defaced by handwriting or excessive handling will not be accepted. The figure number, indication of the top, and the name of the author must be attached to the back of each illustration. Legends for illustrations should be typewritten on a single list, with the numbers corresponding to those on photographs and drawings. Recognizable photographs of patients are to be appropriately masked and must carry with them written permission for publication.

Special arrangements must be made with the editors for excessive numbers of illustrations. Color plates are not acceptable.

Identification of Patients: Names, initials should not be used. Use of numbers is a preferable form of identification.

Reprints: Because of cost considerations, reprints are not provided routinely to the author(s). Reprints may be ordered separately (100 copies minimum order) and printing costs will be charged to the author(s).

Responsibility: Manuscripts are subject to editorial revisions as deemed necessary by the editors and such modifications will be undertaken so as to bring them into conformity with *Journal* style, which is in compliance with the editorial standards of the AMA. However, neither the editors, nor the publishers, nor the Rhode Island Medical Society will accept responsibility for statements made or opinions expressed by any contributor in any article or feature published in the pages of the *Journal*.

Permission: When material is reproduced from other sources, full credit must be given both to the author and publisher of these sources. Where work is reported from a governmental service or institution, clearance by the appropriate authority must accompany the manuscript.

References: To conserve space and expense, references should be limited to those essential to the subject. The editor reserves the right to reduce the number when it is deemed necessary. The references must be double-spaced and numbered as they appear consecutively in the text, with their positions clearly indicated in the text. All references must be checked to assure complete accuracy. Each journal reference must include the full name of the author(s); complete title of paper; name of publication; volume number; issue number; first and last page of paper; and date (year, month, and day as indicated). Each book reference must include the full name of author(s), editor(s), or both, with initials; title of book; edition; publisher; location; year of publication, volume (if given); and page number. If the reference is to a chapter within a book, the author of the chapter, if different than the author of the book, and the title of the chapter (if any) must be provided.

Correspondence: All correspondence relating to publication should be addressed to: Managing Editor, *Rhode Island Medical Journal*, 106 Francis Street, Providence, RI 02903.

A BRIGHT IDEA TO START WITH...



180^{mg}
alan[®]SR
(verapamil HCl) 180 mg
SUSTAINED-RELEASE CAPLETS

Address medical inquiries to:
G.D. Searle & Co.
Medical & Scientific
Information Department
4901 Searle Parkway
Skokie, IL 60077